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UNITED STATES DEPARTMENT OF AGRICULTURE  
Agricultural Research Service  
Crops Research Division  
Beltsville, Maryland

AN EVALUATION OF SEVERAL CHEMICALS FOR THEIR HERBICIDAL PROPERTIES

1965 Field Results

W. A. Gentner

Preliminary Report Not for Publication 1/

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Plant Industry Station  
CR-18-66

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# Source and Index of Chemicals

Chemical*	Designation	Company Code	Source**	Table Numbers
Di-Armeen DML-11 endothall	-	ARD-6068	ARM	1, 9, 10
Armeen DM12D, salt of dicamba	-	ARD-792	ARM	2, 9, 10
5,7-dichloro-4-methylbenzthiadiazole-2,1,3	-	TH 275-H	THC	3, 9, 10
4-(methylsulfonyl)-2,6-dinitro-N,N-dipropylaniline	-	SD-11831	SHC	4, 9, 10, 34
3,4-dichlorobenzyl-N-methylcarbamate	-	-	UCC	5, 9, 10, 34
2-sec-butylamino-4-isopropylamino-6-methylmercapto-s-triazine	-	GS-13633	GCC	11, 30, 31
2-tert-butylamino-4-isopropylamino-6-methylmercapto-s-triazine	-	GS-13638	GCC	12, 30, 31
2-sec-butylamino-4-ethylamino-6-methylmercapto-s-triazine	-	GS-14253	GCC	13, 30, 31
2-(N-acetylethylamino)-4-isopropylamino-6-methoxy-s-triazine	-	GS-16040	GCC	14, 30, 31
2-ethylamino-4-ethylmercapto-6-isopropylamino-s-triazine	-	GS-16065	GCC	15, 30, 31
1-(3-chloro-4-methylphenyl)-3-methyl-2-pyrrolidinone	-	BV-207	RHC	16, 30, 31, 35
1-(3,4-dichlorophenyl)-3-methyl-2-pyrrolidinone	-	BV-201	RHC	17, 30, 31, 35

# Source and Index of Chemicals

Chemical*	Designation	Company Code	Source**	Table Numbers
1,1-dimethyl-4,6-diisopropyl-5-idanyl ethyl ketone	-	ACP 64-296-B	ACP	18, 30, 31, 33
1-[3-chlorophenyl]-3,5-dimethyl-hexahydro- triazine-2	-	BAY 67027	BAY	19, 30, 31
1-[2-benzthiazolyl]-3-methylimidazolidine	-	BAY 64854	BAY	20, 30, 31
[5-methyl-benzimidazolyl-(2)]-[N-chlorophenyl- N',N'-dimethylfomamidinyl]	-	BAY 67775	BAY	21, 30, 31
2,3,5-trichloro-4-pyridinol	pyriclor	-	DCC	22, 30, 31, 33
1-methyl-3-[3-(N-tert-butylcarbamyloxy)= phenyl]urea	-	NIA 7452	NIA	23, 30, 31, 32
1,1-dimethyl-3-[3-(N-tert-butylcarbamyloxy)= phenyl]urea	-	NIA 11092	NIA	24, 30, 31, 32
N-4-(p-methoxyphenoxy)phenyl-N',N'- dimethylurea	-	CIBA 3470	CIBA	25, 30, 31, 36
2-[(4-chloro-o-tolyl)oxy]-N-methoxyacetamide	-	OCS 21799	VEL	26, 30, 31
2,4-dichlorophenoxyacetic acid	2,4-D	-	DCC	6, 9, 10, 30, 31

# Source and Index of Chemicals

Chemical*	Designation	Company Code	Source**	Table Numbers
isopropyl N-(3-chlorophenyl)carbamate	CIPC	-	PPG	8, 9, 10, 28, 30, 31
4,6-dinitro-o- <u>sec</u> -butylphenol	DNBP	-	DCC	7, 9, 10, 29, 30, 31, 36

\* Nomenclature based on Weed Society of America Terminology Committee Report.

\*\* Abbreviation of Contributors

# List of Contributors

Abbreviation	Source of Chemicals	Contact
ACP	Amchem Products, Incorporated, Ambler, Pennsylvania	R. H. Beatty
ARM	Armour Industrial Chemical Company, McCook, Illinois	W. W. Abramitis
BAY	Vero Beach Laboratories, Vero Beach, Florida	W. E. Wagner
CIBA	CIBA Corporation, Vero Beach, Florida	V. S. Searcy
DCC	Dow Chemical Company, Midland, Michigan	R. N. Raynor
GCC	Geigy Chemical Company, Yonkers, New York	H. M. LeBaron
NIA	Niagara Chemical Division, FMC, Middleport, New York	R. W. Metz
PPG	Pittsburgh Plate Glass Corporation, Pittsburgh, Pennsylvania	W. C. McConnell
RHC	Rohm & Haas Company, Philadelphia, Pennsylvania	E. M. Swisher
SHC	Shell Development Company, Modesto, California	E. F. Feichtmeir
THC	Thompson-Hayward Chemical Company, Kansas City, Missouri	T. W. Hogard
UCC	Union Carbide Chemical Corporation, New York, New York	D. M. Yoder
VEL	Velsicol Chemical Corporation, Chicago, Illinois	W. H. Zick



AN EVALUATION OF SEVERAL CHEMICALS  
FOR THEIR HERBICIDAL PROPERTIES

1965 Field Results

W. A. Gentner 1/

The results of the 1965 field evaluation studies of several chemicals for their herbicidal properties are presented in this report and include the following:

1. Preliminary Logarithmic Rate Plots - where limited information on herbicidal properties of chemicals was obtained.
2. Secondary Logarithmic Rate Plots - where extensive information on herbicidal properties of chemicals was obtained.
3. Soil Incorporation of Selected Chemicals - to determine effect of placement on performance and persistence.

The objectives of the herbicide evaluation project are (1) to develop herbicide evaluation techniques, (2) to determine the responses of crops and weeds to preemergence and postemergence treatments, (3) to obtain preliminary information on the herbicidal properties of new chemicals, (4) to study the relationship between chemical structure and herbicidal activity, and (5) to make this information available to U. S. Department of Agriculture personnel and cooperating state and chemical industry weed research workers.

The logarithmic sprayer is an invaluable tool in determining the rate-range of crop tolerance and weed susceptibility of a large number of test species and provides the basis for selection of herbicidal rates to be studied in replicated single-rate plots. These studies are of a preliminary nature. Plots were not replicated and the results should be analyzed and used accordingly. Data are summarized in tables 9, 10, 30, and 31.

Excellent and continued cooperation of the chemical industry, both nationally and internationally, has made these evaluations of new chemicals for their herbicidal properties possible and is gratefully acknowledged.

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1/ Plant Physiologist, Crops Research Division, Agricultural Research Service, U. S. Department of Agriculture, Beltsville, Maryland.

### PRELIMINARY LOGARITHMIC PLOTS

Soil Type - Codorus-Elkton silt loam

Soil Preparation - Plow; 800 lb/A 5-10-5; disk; cultipack

Plot Design and Size - 3 beds 4 feet wide x 80 feet long

Test Species - Page 14; alfalfa, birdsfoot trefoil, red clover overseeded; D. sanguinalis, and P. oleracea indigenous; other grasses - E. crusgalli, Setaria spp.; other broadleaf weeds - B. kaber, P. pennsylvanicum.

Planting Date - June 20

Planting Equipment - small tractor; tractor-mounted gang planter

Planting Depth - Page 14

Treatment Dates - Pre-e June 4; Post-e June 30

Spray Equipment - Logarithmic Sprayer; 45 gpa

Insect Control - Malathion and methoxychlor weekly - more often if needed.

Data Recorded - Tables 1 through 8; summarized, tables 9 and 10; 0 to 100; 0 = no effect, 100 = death; Pre-e June 18; Post-e July 8.

Climatological Data - Figures 1 and 2.

### SECONDARY LOGARITHMIC PLOTS

Soil Type - Codorus-Elkton silt loam

Soil Preparation - Plow; 800 lb/A 5-10-5; disk; cultipack

Plot Design and Size - 6 beds 4 feet wide x 80 feet long

Test Species - Page 14; birdsfoot trefoil, red clover overseeded; crabgrass indigenous; other grasses - E. crusgalli, Setaria spp.; other broadleaf weeds - A. Theophrasti; A. artemisiifolia, Acalypha virginica, Galinsoga parviflora.

Planting Date - May 18

Planting Equipment - small tractor; tractor-mounted gang planter

Planting Depth - Page 14

Treatment Dates - Pre-e May 19; Post-e June 15

Spray Equipment - Logarithmic Sprayer; 45 gpa

Insect Control - Malathion and methoxychlor weekly, more often if needed.

Data Recorded - Tables 11 through 29; summarized, tables 30 and 31;  
0 to 100; 0 = no effect, 100 = death; Pre-e June 29;  
Post-e July 14.

Climatological Data - Figures 1 and 2.

#### SOIL INCORPORATION OF SELECTED COMPOUNDS

Soil Type - Codorus-Elkton silt loam

Soil Preparation - Plow; 800 lb/A 5-10-5; disk; cultipack

Plot Design and Size - 3 beds 4 feet wide and 80 feet long. Bed 1 -  
preemergence; Bed 2 - treated and incorporated  
in upper 2 inches with reel-type incorporator  
before planting; Bed 3 - treated and incorporated  
in upper 2 inches with tractor powered rotovator  
before planting.

Test Species - Page 14

Planting Date - August 4

Planting Equipment - small tractor; tractor-mounted gang planter

Treatment Date - August 4

Spray Equipment - Logarithmic Sprayer; 45 gpa

Insect Control - Malathion and methoxychlor weekly - more often if needed.

Data Recorded - Tables 32 through 36; 0 to 100; 0 = no effect; 100 = death;  
August 30.

## SUMMARY

The results of the 1965 field evaluation studies are summarized in tables 9, 10, 30, and 31.

These tables show which crop(s) have acceptable tolerance of new herbicides at rates which control grassy and/or broadleafed weeds. Very active compounds as well as those which did not control weeds at rates tolerated by crops are shown. Specific data on each compound may be found by referring to the table number shown after chemical names in the summary tables.

### Preliminary logarithmic plots

The di-armeen DML-11 endothall, although possessing moderate herbicidal activity as a preemergence treatment, was very active at rates above 1 lb/A as a postemergence treatment.

The armeen 12D salt of dicamba shows promise for preemergence weed control in field corn at rates of 4 lb/A active ingredient or less. This compound is very active as a postemergence treatment at rates of 1 lb/A active ingredient and above.

All crops showed high tolerance to the preemergence application of the 4-(methylsulfonyl)-2,6-dinitro-N,N-dipropylaniline at levels which satisfactorily controlled broadleafed and grassy weeds. The low level of postemergence activity of this compound suggests its possible use after clean cultivation at lay-by.

The 3,4-dichlorobenzyl N-methylcarbamate appears promising for preemergence control of broadleafed and grassy weeds in corn, lima beans, peanuts, and safflower.

### Secondary logarithmic plots.

The 2-sec-butylamino-4-isopropylamino-6-methylmercapto-s-triazine, the 2-sec-triethylamino-4-ethylamino-6-methylmercapto-s-triazine, the 2-ethylamino-4-ethylmercapto-6-isopropylamino-s-triazine, and the 1-(3,4-dichlorophenyl)-3-methyl-2-pyrrolidinone appear promising for preemergence control of broadleafed and grassy weeds in large-seeded legumes at rates from 2 to 4 lb/A active ingredient.

The 2-tert-butylamino-4-isopropylamino-6-methylmercapto-s-triazine appears promising for the preemergence control of broadleafed and grassy weeds in peas and onions at 2 lb/A active ingredient.



The 1,1-dimethyl-4,6-diisopropyl-5-indanyl ethyl ketone appears promising for the preemergence control of grasses in a large number of crops. The tolerance of many crops to postemergence treatments with this compound suggests its use after clean cultivation at lay-by.

The high degree of tolerance of peanuts to preemergence treatments of 1/2 lb/A active ingredient of 2,3,5-trichloro-4-pyridinol suggests further evaluation for the control of broadleafed and grassy weeds in this crop.

The high order of 1-methyl-3-[3-(N-tert-butylcarbamyloxy)phenyl]urea and 1,1-dimethyl-3-[3-(N-tert-butylcarbamyloxy)phenyl]urea as pre- and postemergence treatments suggests that these compounds be further evaluated as soil sterilants.

#### Soil incorporation plots

The general activity of 2,3,5-trichloro-4-pyridinol was enhanced by soil incorporation. Activities of other chemicals included in this study were not significantly changed by incorporation with the soil; however, there was no significant decrease in herbicidal activity due to treatment. Soil incorporation is useful where water or wind sheet erosion or volatility is a problem. Soil incorporation is also used to minimize photodegradation of herbicides and to insure contact of the chemical with soil moisture.

In general, the rotovated plots showed a slight decrease in herbicidal activity when compared to plots in which the reel-type incorporator was used. This difference was probably due to greater depth of incorporation and consequently dilution of chemical in plots where the rotovator was used.

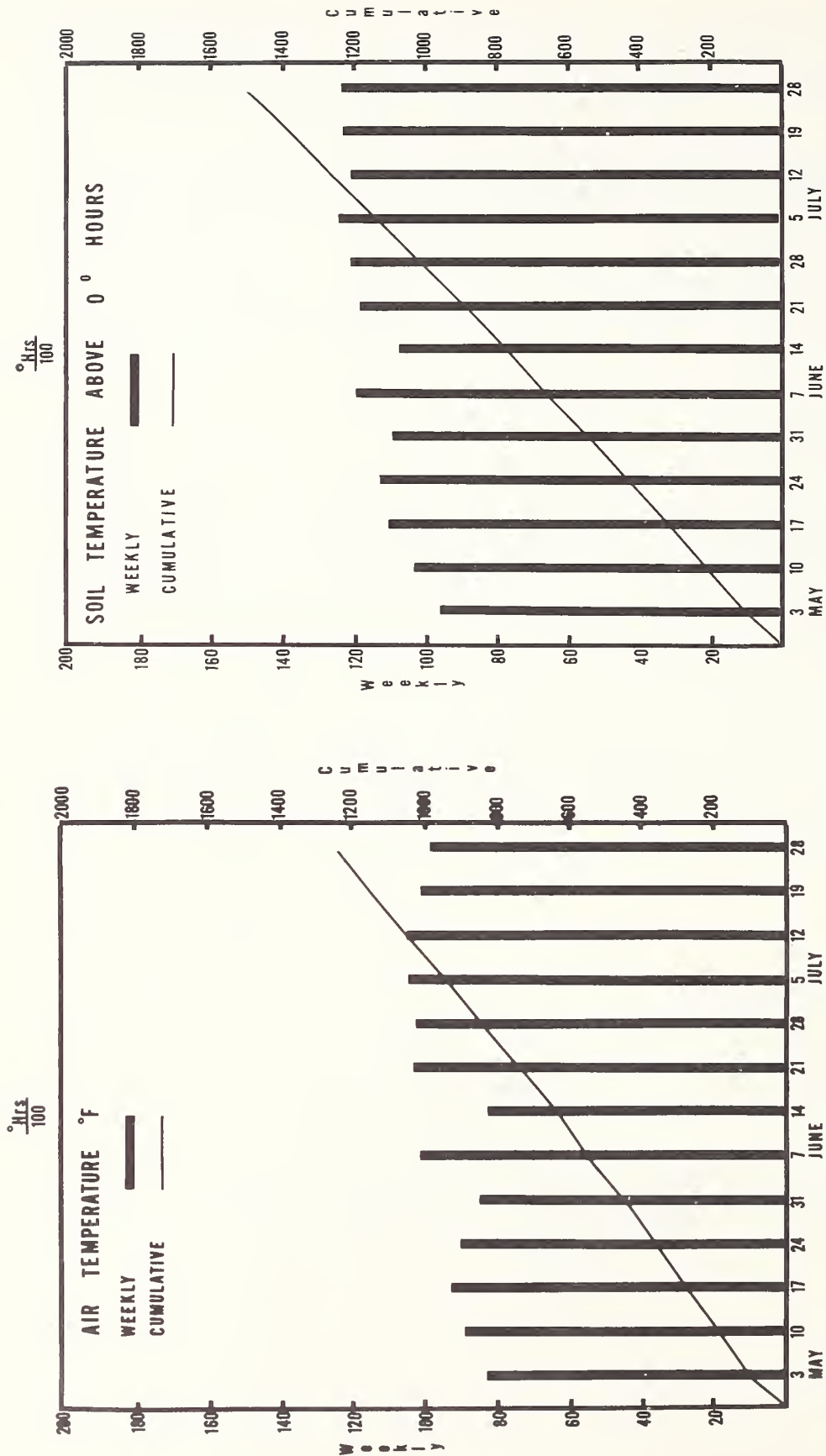


Figure 1.--Air and Soil Temperature

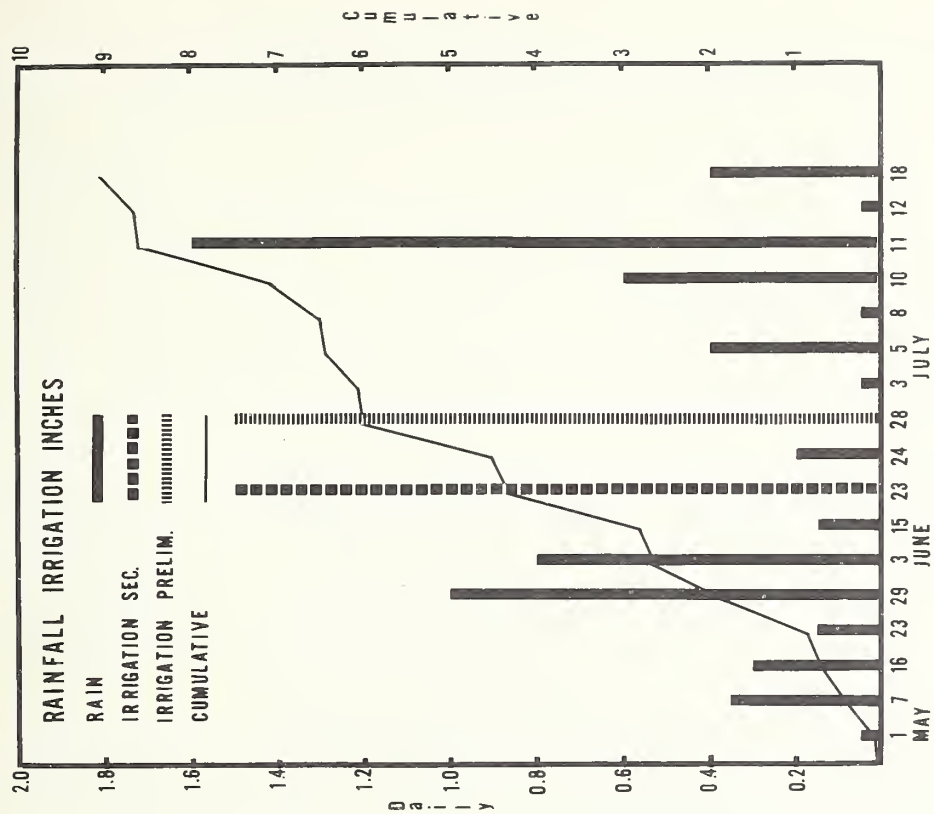
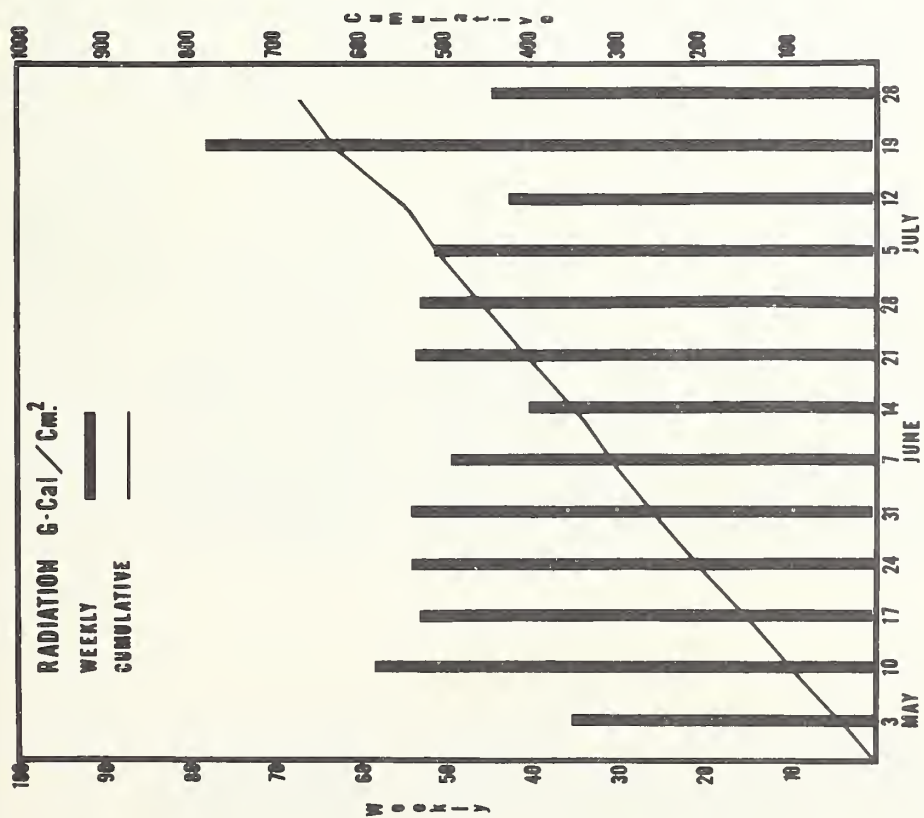


Figure 2.--Radiation, Rainfall and Irrigation

A List of Species and Varietal Names of Crops and Weeds

Common Name	Scientific Name	Variety	Depth of Planting Row Opener No.	Height of test species in inches at time of postemergence treatment
				Preliminary Secondary
1. Alfalfa	Medicago sativa L.	Buffalo	8 0sa/	7 6
2. Birdsfoot trefoil	Lotus corniculatus L.	Italian	OS	6 6
3. Buckwheat	Fagopyrum esculentum Moench.	Mixed	4	44 36
4. Cabbage	Brassica oleracea v. capitata L.	Late Flat Dutch	8	12 12
5. Corn, field	Zea Mays L.	US 13	2	28 26
6. Corn, sweet	Zea Mays v. rugosa Bonaf.	Iochief	2	- 18
7. Cotton	Gossypium hirsutum L.	Coker 100 WR	2	10 10
8. Cucumbers	Cucumis sativus L.	Long Marketer	4	15 12
9. Flax	Linum usitatissimum L.	Bolley	4	12 14
10. Lima beans	Phaseolus limensis Macf.	Baby Fordhook	2	12 13
11. Oats	Avena sativa L.	Clint Land	4	- 19
12. Onions	Allium sativum L.	Evergreen Bunching	8	- 4
13. Peanuts	Arachis hypogaea L.	Spanish	2	5 5
14. Peas	Pisum sativum L.	Thomas Laxton	2	- 39
15. Red Clover	Trifolium pratense L.	Kenland	OS	4 3
16. Safflower	Carthamus tinctorius L.	Aolo 4	4	13 13
17. Snapbeans	Phaseolus vulgaris L.	Top Crop	2	- 17
18. Sorghum	Sorghum vulgare Pers.	Atlas	4	- 13
19. Soybeans	Glycine max (L.) Merr.	Lee	2	18 17
20. Squash	Cucurbita pepo L.	Early Yellow Summer		
		Crookneck	4	26 19
21. Sugar beets	Beta vulgaris L.	US 401	4	8 9
22. Tomatoes	Lycopersicon esulentum Mill.	Rutgers	8	- 4
23. Turnips	Brassica campestris L.	Purple Top White Globe	8	- 13
24. Crabgrass	Digitaria sanguinalis (L.) Scop	-----	-	5 5
25. Ryegrass	Lolium multiflorum Lam.	Annual Italian	8	9 10
26. Pigweed	Amaranthus retroflexus L.	-----	8	- 2
27. Purslane	Portulaca oleracea L.	-----	-	10 -
28. Rape	Brassica napus L.	-----	8	- 18

a/ OS = Overseeded; covered with chain drag.



TABLE 1.-- Preliminary Logarithmic Rate Plot Results

Chemical

Di-Armeen DML-11 endothall

Application	Preemergence						Postemergence					
Rate lb/A (	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>												
Alfalfa	40	20	10	0	0	0	100	90	70	40	10	0
B-ft. trefoil	40	20	10	0	0	0	100	90	70	40	10	0
Buckwheat	0	0	0	0	0	0	100	100	100	80	70	60
Cabbage	0	0	0	0	0	0	80	70	40	20	0	0
Corn, field	30	30	20	0	0	0	100	90	70	60	50	40
Cotton	30	20	10	0	0	0	100	100	100	100	100	70
Cucumber	20	10	0	0	0	0	100	100	80	50	20	0
Flax	0	0	0	0	0	0	100	100	100	100	80	70
Lima beans	30	20	10	0	0	0	100	100	70	60	50	40
Peanuts	0	0	0	0	0	0	60	50	20	0	0	0
Red clover	40	20	0	0	0	0	100	90	70	30	0	0
Safflower	20	10	0	0	0	0	100	100	100	100	80	60
Soybeans	40	40	40	40	40	40	100	100	100	80	70	60
Squash	30	20	0	0	0	0	90	80	50	20	0	0
Sugarbeets	30	20	0	0	0	0	100	100	60	30	10	0
Crop Tox. Av.	23	15	7	3	3	3	95	91	73	54	37	27
<u>Weeds</u>												
Crabgrass	20	10	0	0	0	0	50	40	30	0	0	0
Ryegrass	0	0	0	0	0	0	60	50	40	20	0	0
Other Grasses	30	10	0	0	0	0	60	30	0	0	0	0
Purslane	40	30	20	0	0	0	60	50	30	0	0	0
Weed Tox. Av.	23	13	5	0	0	0	58	43	25	5	0	0
Total Tox. Av.	23	15	6	2	2	2	87	81	63	44	29	21

TABLE 2.-- Preliminary Logarithmic Rate Plot Results

Chemical

Armeen DM12D, salt of dicamba

Application	Preemergence						Postemergence					
Rate lb/A (	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>												
Alfalfa	100	100	100	100	90	60	100	100	100	90	70	60
B-ft. trefoil	100	100	100	90	80	60	100	100	100	90	70	60
Buckwheat	80	70	60	50	40	30	100	100	90	80	80	60
Cabbage	60	50	50	40	40	30	80	70	50	40	40	20
Corn, field	40	30	20	0	0	0	70	60	50	40	40	30
Cotton	70	70	60	60	50	50	100	100	90	80	70	50
Cucumber	100	100	100	70	60	60	100	100	100	100	100	80
Flax	80	70	60	50	40	30	100	90	70	60	50	40
Lima beans	70	60	50	50	40	40	100	100	100	100	100	80
Peanuts	60	50	40	40	40	40	100	80	70	60	50	40
Red clover	100	100	100	100	100	80	100	100	100	90	70	60
Safflower	100	100	90	70	70	60	100	100	90	70	60	50
Soybeans	100	90	70	70	60	60	100	100	100	100	90	80
Squash	80	70	60	50	50	50	100	100	100	90	80	70
Sugarbeets	100	100	90	70	70	60	100	100	100	100	90	90
Crop Tox. Av.	83	77	70	61	55	47	97	93	87	79	71	58
<u>Weeds</u>												
Crabgrass	90	80	60	50	40	30	50	20	0	0	0	0
Ryegrass	60	40	30	30	10	0	30	20	0	0	0	0
Other Grasses	60	60	50	50	40	40	60	20	0	0	0	0
Purslane	100	90	70	60	50	40	100	100	90	80	70	60
Weed Tox. Av.	78	68	53	48	35	28	60	40	23	20	18	15
Total Tox. Av.	82	75	66	58	51	43	89	82	74	67	59	49

TABLE 3 .-- Preliminary Logarithmic Rate Plot Results

Chemical

5,7-dichloro-4-methylbenzthiadiazole-2,1,3

Application	Preemergence						Postemergence					
Rate lb/A (	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>												
Alfalfa	30	10	0	0	0	0	30	10	0	0	0	0
B-ft. trefoil	20	10	0	0	0	0	20	0	0	0	0	0
Buckwheat	0	0	0	0	0	0	30	20	0	0	0	0
Cabbage	0	0	0	0	0	0	10	0	0	0	0	0
Corn, field	30	20	10	0	0	0	20	10	0	0	0	0
Cotton	20	10	0	0	0	0	20	10	0	0	0	0
Cucumber	30	10	0	0	0	0	20	10	0	0	0	0
Flax	0	0	0	0	0	0	0	0	0	0	0	0
Lima beans	30	20	10	0	0	0	20	10	0	0	0	0
Peanuts	20	10	0	0	0	0	30	10	0	0	0	0
Red clover	20	10	0	0	0	0	30	10	0	0	0	0
Safflower	0	0	0	0	0	0	40	30	10	0	0	0
Soybeans	50	40	40	30	10	0	50	40	40	40	40	40
Squash	20	10	0	0	0	0	30	10	0	0	0	0
Sugarbeets	30	20	10	0	0	0	70	50	30	10	0	0
Crop Tox. Av.	20	11	5	2	1	0	28	15	5	3	3	3
<u>Weeds</u>												
Crabgrass	0	0	0	0	0	0	10	0	0	0	0	0
Ryegrass	20	10	0	0	0	0	30	10	0	0	0	0
Other Grasses	30	20	0	0	0	0	10	0	0	0	0	0
Purslane	30	20	10	0	0	0	30	10	0	0	0	0
Weed Tox. Av.	20	13	3	0	0	0	20	5	0	0	0	0
Total Tox. Av.	20	12	4	2	1	0	26	13	4	3	2	2

TABLE 4 .-- Preliminary Logarithmic Rate Plot Results

Chemical		4-(methylsulfonyl)-2,6-dinitro-N,N-dipropylaniline										
Application							Postemergence					
Preemergence												
Rate lb/A (	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>												
Alfalfa	20	10	0	0	0	0	10	0	0	0	0	0
B-ft. trefoil	20	10	0	0	0	0	0	0	0	0	0	0
Buckwheat	20	10	0	0	0	0	20	10	0	0	0	0
Cabbage	0	0	0	0	0	0	10	0	0	0	0	0
Corn, field	30	20	10	0	0	0	30	20	10	0	0	0
Cotton	20	10	0	0	0	0	20	10	0	0	0	0
Cucumber	0	0	0	0	0	0	0	0	0	0	0	0
Flax	0	0	0	0	0	0	0	0	0	0	0	0
Lima beans	0	0	0	0	0	0	0	0	0	0	0	0
Peanuts	30	0	0	0	0	0	30	20	10	0	0	0
Red clover	0	0	0	0	0	0	0	0	0	0	0	0
Safflower	20	0	0	0	0	0	30	10	0	0	0	0
Soybeans	20	10	0	0	0	0	30	10	0	0	0	0
Squash	20	10	0	0	0	0	0	0	0	0	0	0
Sugarbeets	20	10	0	0	0	0	0	0	0	0	0	0
Crop Tox. Av.	15	6	1	0	0	0	12	5	1	0	0	0
<u>Weeds</u>												
Crabgrass	70	60	50	30	10	0	20	10	0	0	0	0
Ryegrass	20	10	0	0	0	0	0	0	0	0	0	0
Other Grasses	60	60	40	30	10	0	20	10	0	0	0	0
Purslane	80	70	60	50	40	30	0	0	0	0	0	0
Weed Tox. Av.	58	50	38	28	15	8	10	5	0	0	0	0
Total Tox. Av.	24	15	8	6	3	2	12	5	1	0	0	0



TABLE 5 .-- Preliminary Logarithmic Rate Plot Results

Chemical

3,4-dichlorobenzyl-N-methylcarbamate

Application	Preemergence						Postemergence					
Rate lb/A (	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>												
Alfalfa	100	90	80	60	40	20	50	40	20	0	0	0
B-ft. trefoil	100	100	90	90	70	40	60	40	20	0	0	0
Buckwheat	100	100	80	50	20	0	70	50	40	40	30	30
Cabbage	100	90	50	30	0	0	50	40	30	10	0	0
Corn, field	30	20	10	10	0	0	50	40	30	20	10	0
Cotton	50	40	30	0	0	0	80	70	50	40	10	0
Cucumber	100	100	60	40	10	0	60	50	40	20	0	0
Flax	100	80	50	10	0	0	80	60	30	10	0	0
Lima beans	40	30	20	0	0	0	80	60	30	10	0	0
Peanuts	40	30	20	10	0	0	70	60	40	20	0	0
Red clover	100	90	80	60	40	20	60	40	20	0	0	0
Safflower	40	30	20	0	0	0	80	70	60	50	40	40
Soybeans	50	40	40	40	40	40	70	50	40	30	20	10
Squash	50	40	30	20	0	0	50	40	20	0	0	0
Sugarbeets	100	100	70	50	30	0	80	60	40	20	0	0
Crop Tox. Av.	73	65	49	31	17	8	66	51	34	18	7	5
<u>Weeds</u>												
Crabgrass	100	100	80	60	30	20	80	50	10	0	0	0
Ryegrass	50	40	30	10	0	0	40	30	20	0	0	0
Other Grasses	70	60	60	60	50	40	70	40	10	0	0	0
Purslane	100	100	80	60	50	30	70	40	10	0	0	0
Weed Tox. Av.	80	75	63	48	33	23	65	40	13	0	0	0
Total Tox. Av.	75	67	52	35	20	11	66	49	29	14	6	4

TABLE 6 .-- Preliminary Logarithmic Rate Plot Results

Chemical

2,4-dichlorophenoxyacetic acid

Application	Preemergence						Postemergence					
Rate lb/A (	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>												
Alfalfa	90	70	50	40	20	0	100	90	80	70	60	60
B-ft. trefoil	90	70	50	40	20	0	100	90	80	70	60	60
Buckwheat	30	10	0	0	0	0	100	90	80	80	70	70
Cabbage	60	40	20	0	0	0	80	80	70	70	60	50
Corn, field	30	10	0	0	0	0	60	50	40	30	0	0
Cotton	70	60	50	40	20	0	100	90	80	70	70	60
Cucumber	80	60	40	20	0	0	70	60	50	40	20	0
Flax	30	10	0	0	0	0	100	80	70	50	40	40
Lima beans	50	40	30	0	0	0	100	100	100	90	80	70
Peanuts	40	30	20	0	0	0	70	60	50	40	20	0
Red clover	90	70	50	40	20	0	100	100	80	70	60	60
Safflower	60	40	20	0	0	0	100	90	80	70	70	70
Soybeans	60	50	40	40	40	30	100	90	90	80	80	70
Squash	60	50	40	30	10	0	70	60	60	50	40	40
Sugarbeets	100	80	60	40	10	0	100	100	90	70	70	60
Crop Tox. Av.	63	46	31	19	9	2	90	82	73	63	53	47
<u>Weeds</u>												
Crabgrass	60	50	30	10	0	0	10	0	0	0	0	0
Ryegrass	30	10	0	0	0	0	10	0	0	0	0	0
Other Grasses	60	50	40	30	20	0	0	0	0	0	0	0
Purslane	90	70	70	50	40	30	100	90	80	70	60	60
Weed Tox. Av.	60	43	35	23	15	8	30	23	20	18	15	15
Total Tox. Av.	62	45	32	20	11	3	77	69	62	54	45	40

TABLE 7 .-- Preliminary Logarithmic Rate Plot Results

Chemical

4,6-dinitro-o-sec-butylphenol

Application							Postemergence					
Preemergence												
Rate lb/A (	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops.</u>												
Alfalfa	80	70	40	20	0	0	80	60	40	20	0	0
B-ft. trefoil	90	70	40	20	0	0	100	90	70	30	10	0
Buckwheat	90	70	60	30	0	0	100	90	80	70	60	40
Cabbage	100	100	100	70	40	0	100	100	100	100	100	100
Corn, field	20	10	0	0	0	0	60	50	30	20	10	0
Cotton	30	10	0	0	0	0	100	100	70	30	10	0
Cucumber	30	10	0	0	0	0	100	100	100	70	50	20
Flax	80	70	40	20	0	0	100	100	90	70	40	20
Lima beans	20	10	0	0	0	0	90	70	50	30	10	0
Peanuts	20	10	0	0	0	0	80	60	40	10	0	0
Red clover	80	70	40	20	0	0	100	80	50	30	10	0
Safflower	100	100	70	50	30	0	100	100	100	100	100	100
Soybeans	20	10	0	0	0	0	100	90	60	40	20	0
Squash	30	10	0	0	0	0	100	100	100	60	20	0
Sugarbeets	100	100	90	60	30	0	100	100	100	100	100	100
Crop Tox. Av.	59	48	32	19	7	0	94	86	72	52	36	25
<u>Weeds</u>												
Crabgrass	80	70	50	30	0	0	80	40	20	10	0	0
Ryegrass	40	20	0	0	0	0	100	80	60	40	20	0
Other Grasses	90	80	60	40	10	0	80	50	20	0	0	0
Purslane	100	100	70	60	50	30	100	100	90	70	60	50
Weed Tox. Av.	78	68	45	33	15	8	90	68	48	30	20	13
Total Tox. Av.	63	52	35	22	8	2	93	82	67	47	33	23

TABLE 8 .-- Preliminary Logarithmic Rate Plot Results

Chemical		isopropyl N-(3-chlorophenyl)carbamate											
Application		Preemergence						Postemergence					
Rate lb/A (	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4	
<u>Crops</u>													
Alfalfa	50	30	20	0	0	0	30	20	0	0	0	0	
B-ft. trefoil	50	30	20	0	0	0	40	20	10	0	0	0	
Buckwheat	90	80	70	60	50	40	60	40	40	30	10	0	
Cabbage	40	30	20	0	0	0	60	50	40	30	10	0	
Corn, field	20	10	0	0	0	0	60	40	30	20	20	20	
Cotton	30	20	0	0	0	0	40	20	0	0	0	0	
Cucumber	70	60	50	30	0	0	60	50	40	30	20	0	
Flax	50	30	0	0	0	0	50	40	40	30	0	0	
Lima beans	40	30	0	0	0	0	50	40	10	0	0	0	
Peanuts	30	20	0	0	0	0	50	40	30	10	0	0	
Red clover	50	30	20	0	0	0	30	20	0	0	0	0	
Safflower	20	10	0	0	0	0	50	40	40	40	40	20	
Soybeans	20	10	0	0	0	0	60	40	30	10	0	0	
Squash	30	10	0	0	0	0	50	40	20	0	0	0	
Sugarbeets	50	40	30	20	0	0	50	40	30	10	0	0	
Crop Tox. Av.	43	29	15	7	3	3	49	36	24	14	7	3	
<u>Weeds</u>													
Crabgrass	70	60	40	10	0	0	30	20	10	0	0	0	
Ryegrass	20	10	0	0	0	0	50	40	30	10	0	0	
Other Grasses	70	60	40	10	0	0	20	10	0	0	0	0	
Purslane	80	70	60	30	20	0	40	30	10	0	0	0	
Weed Tox. Av.	60	50	35	13	5	0	35	25	13	3	0	0	
Total Tox. Av.	46	34	19	8	4	2	46	34	22	12	5	2	



TABLE 9.--Summary table of preliminary preemergence logarithmic rate plots showing chemicals tolerated by crops and their control of broadleaf weeds and weed-grasses. <sup>1/</sup>

<u>Crops</u>				<u>Weeds</u>		<u>Chemicals</u>
<u>Vegetable Crops</u>	<u>Sugar Crops</u>	<u>Oilseed and Fiber Crops</u>	<u>Cereals and Forage Crops</u>	<u>Small Seeded Legume Crops</u>		
Cabbage Cucumber Lima beans Squash	Sugarbeets	Cotton Flax Peanuts Safflower Soybeans	Buckwheat Corn, field	Alfalfa B-ft. trefoil Red clover	Brdlf. Grasses	Di-Armeen DML-11 endothall (1)
			X		Brdlf. Grasses	Armeen DML2D, salt of dicamba (2)
					Brdlf. Grasses	5,7-dichloro-4-methylbenz= thiadiazole-2,1,3 (3)
					Brdlf. Grasses	4-(methylsulfonyl)-2,6-dinitro- N,N-dipropylaniline (4)
					Brdlf. Grasses	3,4-dichlorobenzyl-N-methyl= carbamate (5)
					Brdlf. Grasses	2,4-dichlorophenoxyacetic acid (6)
					Brdlf. Grasses	4,6-dinitro-o-sec-butylphenol (7)
					Brdlf. Grasses	isopropyl N-(3-chlorophenyl) carbamate (8)

<sup>1/</sup> Checks are placed opposite crops that tolerated respective chemicals (Phytotoxicity index, 30 or less) in which broadleaf weeds or weed-grasses were controlled (Phytotoxicity index, 70 or more).

TABLE 10.--Summary table of preliminary postemergence logarithmic rate plots showing chemicals tolerated by crops and their control of broadleaf weeds and weed-grasses. <sup>1/</sup>

<u>Crops</u>					<u>Weeds</u>		<u>Chemicals</u>
<u>Vegetable Crops</u>	<u>Sugar Crops</u>	<u>Oilseed and Fiber Crops</u>	<u>Cereals and Forage Crops</u>	<u>Small Seeded Legume Crops</u>			
Cabbage Cucumber Lima beans Squash	Sugarbeets	Cotton Flax Peanuts Safflower Soybeans	Buckwheat Corn, field	Alfalfa B-ft. trefoil Red clover	Weeds not controlled at level tolerated by crops	Brdlf. Grasses	Di-Armeen DML-11 endothall (1)
					Weeds not controlled at level tolerated by crops	Brdlf. Grasses	Armeen DM12D, salt of dicamba (2)
		Relatively inactive				Brdlf. Grasses	5,7-dichloro-4-methylbenz=thiadiazole-2,1,3 (3)
		Relatively inactive				Brdlf. Grasses	4-(methylsulfonyl)-2,6-dinitro-N,N-dipropylaniline (4)
	Weeds not controlled at level tolerated by crops					Brdlf. Grasses	3,4-dichlorobenzyl-N-methyl=carbamate (5)
			X			Brdlf. Grasses	2,4-dichlorophenoxyacetic acid (6)
X		X	X	X		Brdlf. Grasses	4,6-dinitro-o-sec-butylphenol (7)
	Weeds not controlled at level tolerated by crops					Brdlf. Grasses	isopropyl N-(3-chlorophenyl) carbamate (8)

<sup>1/</sup> Checks are placed opposite crops that tolerated respective chemicals (Phytotoxicity index, 30 or less) in which broadleaf weeds or weed-grasses were controlled (Phytotoxicity index, 70 or more).

TABLE 11.-- Secondary Logarithmic Rate Plot Results

Chemical

2-sec-butylamino-4-isopropylamino-6-methylmercapto-s-triazine

Application	Preemergence						Postemergence					
Rate lb/A (	4	2	1	1/2	1/4	1/8	4	2	1	1/2	1/4	1/8
<u>Crops</u>												
Alfalfa	70	50	40	40	10	0	60	40	20	0	0	0
B-ft. trefoil	60	50	40	40	20	0	100	90	80	50	40	20
Buckwheat	100	70	50	20	0	0	90	70	40	40	40	40
Cabbage	100	80	50	30	10	0	100	80	50	20	0	0
Corn, field	40	30	20	10	0	0	70	60	50	40	30	20
Corn, sweet	50	40	20	10	0	0	70	70	50	40	40	40
Cotton	60	40	40	30	20	0	60	50	40	40	30	30
Cucumbers	100	80	60	30	0	0	100	100	100	70	50	30
Flax	40	30	10	10	0	0	100	100	80	50	20	0
Lima beans	40	20	20	10	0	0	80	60	40	30	0	0
Oats	60	40	20	20	0	0	80	70	40	20	0	0
Onions	70	50	30	30	20	0	100	70	40	10	0	0
Peanuts	50	40	30	10	0	0	70	50	40	30	20	0
Peas	30	20	0	0	0	0	40	30	10	0	0	0
Red Clover	100	100	70	50	30	10	100	100	100	80	70	60
Safflower	50	30	30	10	0	0	100	90	60	40	30	0
Snapbeans	50	50	20	10	0	0	100	80	60	50	40	30
Sorghum	60	30	20	10	0	0	60	50	30	0	0	0
Soybeans	50	30	20	20	0	0	90	70	60	40	40	30
Squash	70	30	10	0	0	0	100	100	80	50	30	10
Sugarbeets	100	100	100	80	50	50	100	100	100	100	90	60
Tomatoes	100	100	70	40	20	0	100	100	100	100	80	60
Turnips	100	70	40	10	0	0	100	100	80	50	20	0
Crop Tox. Av.	67	51	35	23	8	3	86	75	59	41	29	19
<u>Weeds</u>												
Crabgrass	80	70	70	60	50	40	40	20	0	0	0	0
Ryegrass	70	40	10	10	0	0	50	40	20	10	0	0
Other Grasses	80	60	50	40	20	0	40	20	0	0	0	0
Mustard	100	90	70	40	20	0	100	100	80	50	30	10
Pigweed	100	100	80	60	30	0	100	70	40	10	0	0
Other Brdlf.	100	100	70	50	30	0	90	60	40	10	0	0
Weed Tox. Av.	88	77	58	43	25	7	70	52	30	13	5	2
Total Tox. Av.	72	57	40	27	11	3	82	70	53	36	24	15

TABLE 12.-- Secondary Logarithmic Rate Plot Results

Chemical      2-tert-butylamino-4-isopropylamino-6-methylmercapto-s-triazine

Application	Preemergence						Postemergence					
Rate lb/A (	4	2	1	1/2	1/4	1/8	4	2	1	1/2	1/4	1/8
<u>Crops</u>												
Alfalfa	90	80	60	40	10	0	40	30	0	0	0	0
B-ft. trefoil	100	100	80	60	40	20	100	100	100	100	60	40
Buckwheat	100	100	90	60	10	0	100	70	40	40	30	20
Cabbage	100	100	90	70	40	10	100	100	60	40	20	0
Corn, field	40	30	10	0	0	0	60	40	40	30	0	0
Corn, sweet	50	30	10	0	0	0	70	50	40	30	0	0
Cotton	60	40	20	20	0	0	40	30	20	0	0	0
Cucumbers	100	100	90	60	40	10	100	100	100	90	60	40
Flax	50	40	20	20	0	0	100	100	70	40	20	0
Lima beans	50	40	30	20	0	0	40	40	20	0	0	0
Oats	90	70	50	30	10	0	70	50	40	10	0	0
Onions	40	20	0	0	0	0	30	20	0	0	0	0
Peanuts	50	30	10	0	0	0	50	40	30	10	0	0
Peas	20	10	0	0	0	0	30	20	0	0	0	0
Red Clover	100	100	100	80	50	30	100	100	100	100	60	50
Safflower	60	40	30	20	0	0	60	50	40	30	0	0
Snapbeans	60	50	50	40	40	20	80	60	50	40	40	30
Sorghum	50	40	10	0	0	0	50	40	20	0	0	0
Soybeans	40	40	30	10	0	0	60	50	40	40	30	30
Squash	80	70	50	30	10	0	100	70	50	40	20	0
Sugarbeets	100	100	100	100	80	60	100	100	100	100	80	50
Tomatoes	100	90	90	70	40	30	100	100	100	100	100	90
Turnips	100	90	80	50	30	0	100	100	90	70	50	20
Crop Tox. Av.	71	61	48	34	17	8	73	63	50	40	25	16
<u>Weeds</u>												
Crabgrass	100	80	60	50	30	10	30	20	0	0	0	0
Ryegrass	30	10	10	0	0	0	40	30	20	0	0	0
Other Grasses	70	60	60	50	30	10	30	20	0	0	0	0
Mustard	100	90	90	70	40	30	100	100	100	60	40	20
Pigweed	100	100	90	60	30	0	100	70	60	50	40	30
Other Brdfl.	100	90	70	40	30	0	70	60	50	40	30	30
Weed Tox. Av.	83	72	63	45	27	8	62	50	38	25	18	13
Total Tox. Av.	73	63	51	36	19	8	71	61	48	37	23	16



TABLE 13.-- Secondary Logarithmic Rate Plot Results

Chemical		2- <u>sec</u> -butylamino-4-ethylamino-6-methylmercapto- <u>s</u> -triazine											
Application		Preemergence						Postemergence					
Rate lb/A (		4	2	1	1/2	1/4	1/8	4	2	1	1/2	1/4	1/8
<u>Crops</u>													
Alfalfa	100	80	60	30	0	0	0	100	70	50	30	0	0
B-ft. trefoil	90	70	60	40	10	0	0	100	100	70	40	10	0
Buckwheat	100	70	40	10	0	0	0	100	90	70	50	40	30
Cabbage	90	80	50	20	0	0	0	40	30	10	0	0	0
Corn, field	30	10	0	0	0	0	0	50	40	20	0	0	0
Corn, sweet	50	40	30	10	0	0	0	50	40	30	0	0	0
Cotton	60	50	40	20	10	0	0	70	50	40	30	0	0
Cucumbers	100	100	70	50	20	10	10	100	100	100	100	100	70
Flax	60	40	20	0	0	0	0	100	100	100	80	60	40
Lima beans	40	30	10	0	0	0	0	80	70	50	40	30	30
Oats	80	60	40	20	0	0	0	60	60	30	10	0	0
Onions	100	80	60	30	0	0	0	60	40	30	10	0	0
Peanuts	40	20	0	0	0	0	0	70	60	40	40	30	10
Peas	30	10	0	0	0	0	0	70	60	40	30	0	0
Red Clover	100	100	100	70	50	20	20	100	100	60	30	10	0
Safflower	80	70	50	20	0	0	0	100	100	100	100	70	40
Snapbeans	50	50	30	10	0	0	0	100	100	100	80	50	40
Sorghum	60	40	20	0	0	0	0	40	30	0	0	0	0
Soybeans	30	20	0	0	0	0	0	100	100	90	70	50	40
Squash	50	30	0	0	0	0	0	100	90	60	40	20	0
Sugarbeets	100	100	100	90	70	50	50	100	100	100	100	100	80
Tomatoes	100	100	100	80	40	10	10	100	100	100	100	80	60
Turnips	100	100	70	50	20	0	0	100	90	50	30	0	0
Crop Tox. Av.	71	59	41	24	10	4	4	82	75	58	44	28	19
<u>Weeds</u>													
Crabgrass	100	100	60	40	30	0	0	60	40	10	0	0	0
Ryegrass	80	60	30	10	0	0	0	30	20	10	0	0	0
Other Grasses	40	10	0	0	0	0	0	70	60	40	20	0	0
Mustard	100	100	70	50	30	10	10	60	50	40	30	10	0
Pigweed	100	100	90	70	50	30	30	90	90	70	40	10	0
Other Brdlf.	100	100	60	50	40	40	40	70	70	50	40	10	0
Weed Tox. Av.	87	80	52	37	25	13	13	63	55	37	22	5	0
Total Tox. Av.	74	63	43	27	13	6	6	78	71	54	39	23	15

TABLE 14.-- Secondary Logarithmic Rate Plot Results

Chemical

2-(N-acetyllethylamino)-4-isopropylamino-6-methoxy-s-triazine

Application	Preemergence						Postemergence					
Rate lb/A (	4	2	1	1/2	1/4	1/8	4	2	1	1/2	1/4	1/8
<u>Crops</u>												
Alfalfa	100	90	50	20	0	0	0	0	0	0	0	0
B-ft. trefoil	100	100	70	40	20	0	40	30	10	0	0	0
Buckwheat	70	50	10	0	0	0	40	40	40	40	30	30
Cabbage	100	90	70	40	30	0	40	40	30	10	0	0
Corn, field	30	10	0	0	0	0	0	0	0	0	0	0
Corn, sweet	40	20	10	0	0	0	40	30	0	0	0	0
Cotton	40	40	20	0	0	0	20	0	0	0	0	0
Cucumbers	100	90	60	40	10	0	40	40	30	20	0	0
Flax	20	10	0	0	0	0	20	10	0	0	0	0
Lima beans	90	80	60	40	30	10	40	40	30	20	10	0
Oats	90	50	20	0	0	0	20	10	0	0	0	0
Onions	100	90	60	40	10	0	20	10	0	0	0	0
Peanuts	50	30	10	0	0	0	40	30	30	10	0	0
Peas	40	30	10	0	0	0	30	20	0	0	0	0
Red Clover	100	100	80	50	20	0	30	30	0	0	0	0
Safflower	30	10	10	0	0	0	30	10	0	0	0	0
Snapbeans	80	60	30	10	0	0	50	40	40	40	30	30
Sorghum	60	40	10	0	0	0	30	20	0	0	0	0
Soybeans	90	60	30	20	10	0	60	50	40	40	40	30
Squash	100	100	70	50	30	0	40	40	30	0	0	0
Sugarbeets	100	100	100	100	70	40	50	40	30	10	0	0
Tomatoes	100	100	80	60	50	30	60	50	40	20	0	0
Turnips	90	80	30	10	0	0	40	30	10	0	0	0
Crop Tox. Av.	75	62	39	23	12	3	34	27	16	9	5	4
<u>Weeds</u>												
Crabgrass	70	50	20	0	0	0	0	0	0	0	0	0
Ryegrass	60	40	30	20	0	0	0	0	0	0	0	0
Other Grasses	90	70	60	40	40	20	0	0	0	0	0	0
Mustard	100	90	60	40	20	0	40	40	10	0	0	0
Pigweed	100	80	60	50	30	20	20	10	0	0	0	0
Other Brdfl.	100	90	70	70	60	50	40	20	10	0	0	0
Weed Tox. Av.	87	70	50	37	25	15	17	12	3	0	0	0
Total Tox. Av.	77	64	41	26	15	6	30	23	13	7	4	3

TABLE 15.-- Secondary Logarithmic Rate Plot Results

Chemical		2-ethylamino-4-ethylmercapto-6-isopropylamino- <u>s</u> -triazine											
Application		Preemergence						Postemergence					
Rate lb/A (	4	2	1	1/2	1/4	1/8	4	2	1	1/2	1/4	1/8	
<u>Crops</u>													
Alfalfa	90	70	50	20	0	0	100	100	60	30	10	0	
B-ft. trefoil	100	100	70	50	30	0	100	70	50	40	20	0	
Buckwheat	90	80	50	20	0	0	100	100	80	50	40	30	
Cabbage	90	70	40	20	0	0	80	70	40	20	0	0	
Corn, field	20	0	0	0	0	0	40	40	20	0	0	0	
Corn, sweet	40	20	10	0	0	0	50	40	30	10	0	0	
Cotton	50	40	20	10	0	0	50	40	10	0	0	0	
Cucumbers	100	100	90	60	40	20	100	100	100	100	80	60	
Flax	70	40	20	0	0	0	100	100	70	50	20	0	
Lima beans	40	30	20	10	10	0	100	70	60	40	30	10	
Oats	90	80	50	30	0	0	100	80	50	30	10	10	
Onions	100	80	50	40	10	0	100	70	50	40	10	0	
Peanuts	40	30	10	0	0	0	70	60	50	40	20	0	
Peas	40	20	0	0	0	0	50	40	40	30	10	0	
Red Clover	100	100	100	90	70	60	100	100	70	50	20	0	
Safflower	80	50	30	0	0	0	100	100	70	40	20	0	
Snapbeans	40	30	10	0	0	0	100	80	60	40	20	0	
Sorghum	50	20	20	0	0	0	60	40	30	10	0	0	
Soybeans	30	20	20	10	0	0	100	100	80	60	40	30	
Squash	60	40	10	0	0	0	100	100	80	60	40	10	
Sugarbeets	100	100	100	100	90	50	100	100	100	100	100	80	
Tomatoes	100	100	90	60	30	10	100	100	80	60	40	30	
Turnips	100	90	70	40	20	0	100	100	70	50	30	10	
Crop Tox. Av.	70	57	40	24	13	6	87	78	59	41	24	11	
<u>Weeds</u>													
Crabgrass	100	90	70	50	20	0	50	40	30	0	0	0	
Ryegrass	60	40	20	0	0	0	80	70	60	40	20	0	
Other Grasses	80	70	60	50	20	0	50	40	10	0	0	0	
Mustard	100	100	90	60	40	10	100	80	70	50	30	0	
Pigweed	90	80	60	50	30	20	100	70	50	30	0	0	
Other Brdlf.	100	100	90	70	40	20	100	70	50	40	10	0	
Weed Tox. Av.	88	80	65	47	25	8	80	62	45	27	10	0	
Total Tox. Av.	74	62	46	29	16	7	86	75	56	38	21	9	

TABLE 16.-- Secondary Logarithmic Rate Plot Results

Chemical

1-(3-chloro-4-methylphenyl-3-methyl-2-pyrrolidinone)

Application	Preemergence						Postemergence					
Rate lb/A (	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>												
Alfalfa	100	80	50	30	0	0	40	40	20	0	0	0
B-ft. trefoil	100	70	50	40	10	0	40	20	0	0	0	0
Buckwheat	100	100	60	20	0	0	70	40	30	30	10	0
Cabbage	100	90	70	50	30	0	100	100	70	40	20	0
Corn, field	30	10	0	0	0	0	40	30	20	0	0	0
Corn, sweet	40	20	10	0	0	0	50	40	40	30	10	10
Cotton	40	30	10	0	0	0	0	0	0	0	0	0
Cucumbers	100	100	90	50	30	10	90	70	50	30	0	0
Flax	40	20	10	0	0	0	90	60	20	10	0	0
Lima beans	30	10	0	0	0	0	50	40	20	10	0	0
Oats	50	30	30	0	0	0	30	0	0	0	0	0
Onions	80	60	40	20	0	0	40	20	10	0	0	0
Peanuts	40	30	10	0	0	0	40	20	0	0	0	0
Peas	30	10	0	0	0	0	50	40	20	10	0	0
Red Clover	100	100	100	60	40	10	70	40	20	0	0	0
Safflower	50	20	10	0	0	0	90	70	50	30	10	0
Snapbeans	40	30	10	0	0	0	50	40	20	0	0	0
Sorghum	40	20	0	0	0	0	40	20	0	0	0	0
Soybeans	40	30	10	0	00	0	60	40	30	10	0	0
Squash	50	50	30	10	0	0	100	70	50	20	0	0
Sugarbeets	100	100	100	80	50	20	100	80	60	40	20	0
Tomatoes	40	40	30	20	10	0	40	20	0	0	0	0
Turnips	100	100	80	60	30	0	70	50	30	10	0	0
Crop Tox. Av.	63	50	34	19	9	2	59	41	24	12	3	0
<u>Weeds</u>												
Crabgrass	80	70	50	20	0	0	20	10	0	0	0	0
Ryegrass	50	30	10	0	0	0	60	40	20	0	0	0
Other Grasses	70	60	40	20	0	0	50	40	10	0	0	0
Mustard	100	100	90	70	50	30	100	90	50	20	0	0
Pigweed	100	100	80	60	50	30	0	0	0	0	0	0
Other Brdfl.	100	80	60	50	40	10	40	30	10	0	0	0
Weed Tox. Av.	83	73	55	37	23	12	45	35	15	3	0	0
Total Tox. Av.	67	55	39	23	12	4	56	40	22	10	0	0



TABLE 17.-- Secondary Logarithmic Rate Plot Results

Chemical		1-(3,4-dichlorophenyl)-3-methyl-2-pyrrolidinone										
Application		Preemergence					Postemergence					
Rate 'lb/A (	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>												
Alfalfa	100	100	100	70	50	10	100	70	50	30	10	0
B-ft. trefoil	100	80	60	40	20	0	90	70	50	10	0	0
Buckwheat	100	100	80	50	30	10	100	70	40	20	0	0
Cabbage	100	100	90	50	20	0	100	100	80	60	50	40
Corn, field	20	10	0	0	0	0	50	40	20	10	0	0
Corn, sweet	40	30	0	0	0	0	70	50	40	20	0	0
Cotton	30	20	10	0	0	0	20	0	0	0	0	0
Cucumbers	100	100	90	60	20	0	100	80	60	40	10	0
Flax	60	40	10	0	0	0	100	100	50	10	0	0
Lima beans	30	20	0	0	0	0	50	40	30	10	0	0
Oats	60	40	20	0	0	0	40	20	0	0	0	0
Onions	70	40	30	20	0	0	40	30	10	0	0	0
Peanuts	50	20	10	0	0	0	40	20	0	0	0	0
Peas	0	0	0	0	0	0	30	20	0	0	0	0
Red Clover	100	100	100	90	60	20	100	70	40	0	0	0
Safflower	30	20	0	0	0	0	80	60	50	20	0	0
Snapbeans	30	20	0	0	0	0	50	40	20	0	0	0
Sorghum	40	20	0	0	0	0	40	30	10	0	0	0
Soybeans	30	30	0	0	0	0	50	40	30	10	0	0
Squash	80	60	40	10	0	0	100	100	60	40	20	0
Sugarbeets	100	100	90	70	40	20	100	100	70	50	30	20
Tomatoes	100	80	50	30	20	10	100	100	70	50	20	10
Turnips	100	100	100	70	40	20	100	80	60	40	10	0
Crop Tox. Av.	64	53	38	24	13	4	72	58	37	18	7	3
<u>Weeds</u>												
Crabgrass	70	50	30	10	0	0	20	10	0	0	0	0
Ryegrass	40	20	10	0	0	0	40	30	10	0	0	0
Other Grasses	70	60	50	30	0	0	40	30	10	0	0	0
Mustard	100	100	100	90	60	30	100	100	70	40	40	20
Pigweed	100	100	70	70	50	20	0	0	0	0	0	0
Other Brdlf.	100	80	70	70	60	40	40	30	0	0	0	0
Weed Tox. Av.	80	68	55	45	28	15	40	33	15	7	7	3
Total Tox. Av.	67	57	42	29	16	6	65	53	32	16	7	3

TABLE 18.-- Secondary Logarithmic Rate Plot Results

Chemical

1,1-dimethyl-4,6-diisopropyl-5-idanyl ethyl ketone

Application	Preemergence						Postemergence					
Rate lb/A (	4	2	1	1/2	1/4	1/8	4	2	1	1/2	1/4	1/8
<u>Crops</u>												
Alfalfa	0	0	0	0	0	0	40	30	10	0	0	0
B-ft. trefoil	40	20	0	0	0	0	20	10	0	0	0	0
Buckwheat	40	20	0	0	0	0	20	10	0	0	0	0
Cabbage	50	30	0	0	0	0	30	20	0	0	0	0
Corn, field	10	0	0	0	0	0	40	40	20	0	0	0
Corn, sweet	20	10	0	0	0	0	50	40	40	30	10	0
Cotton	50	30	10	0	0	0	20	10	0	0	0	0
Cucumbers	20	10	0	0	0	0	30	10	0	0	0	0
Flax	20	10	0	0	0	0	0	0	0	0	0	0
Lima beans	30	10	0	0	0	0	30	10	0	0	0	0
Oats	40	30	0	0	0	0	0	0	0	0	0	0
Onions	50	20	0	0	0	0	0	0	0	0	0	0
Peanuts	20	10	0	0	0	0	0	0	0	0	0	0
Peas	0	0	0	0	0	0	0	0	0	0	0	0
Red Clover	0	0	0	0	0	0	0	0	0	0	0	0
Safflower	0	0	0	0	0	0	40	30	30	20	10	0
Snapbeans	20	10	0	0	0	0	20	10	0	0	0	0
Sorghum	40	20	0	0	0	0	0	0	0	0	0	0
Soybeans	10	0	0	0	0	0	20	10	0	0	0	0
Squash	40	20	0	0	0	0	0	0	0	0	0	0
Sugarbeets	50	40	20	0	0	0	40	30	10	0	0	0
Tomatoes	30	20	0	0	0	0	30	10	0	0	0	0
Turnips	40	30	0	0	0	0	40	20	0	0	0	0
Crop Tox. Av.	27	15	1	0	0	0	20	13	5	2	1	0
<u>Weeds</u>												
Crabgrass	100	70	70	60	50	20	0	0	0	0	0	0
Ryegrass	100	90	70	40	20	0	0	0	0	0	0	0
Other Grasses	50	30	10	0	0	0	0	0	0	0	0	0
Mustard	60	40	10	0	0	0	30	20	0	0	0	0
Pigweed	50	30	0	0	0	0	0	0	0	0	0	0
Other Brdfl.	60	40	30	20	10	0	20	10	0	0	0	0
Weed Tox. Av.	70	50	32	20	13	3	8	5	0	0	0	0
Total Tox. Av.	36	22	8	4	3	1	18	11	4	2	1	0

TABLE 19.-- Secondary Logarithmic Rate Plot Results

Chemical

1-[3-chlorophenyl]-3,5-dimethyl-hexahydro-triazinone-2

Preemergence							Postemergence					
Application	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>												
Alfalfa	80	70	40	10	0	0	40	30	10	0	0	0
B-ft. trefoil	100	100	80	60	40	0	90	70	40	30	0	0
Buckwheat	90	60	30	0	0	0	60	50	40	40	30	20
Cabbage	100	100	90	60	20	0	100	70	50	40	40	30
Corn, field	60	40	20	0	0	0	60	40	30	20	20	20
Corn, sweet	60	40	20	0	0	0	50	40	40	20	20	20
Cotton	60	50	40	20	0	0	40	30	10	0	0	0
Cucumbers	100	100	70	40	30	0	100	80	50	40	40	40
Flax	70	40	30	0	0	0	70	30	10	0	0	0
Lima beans	70	60	40	20	0	0	60	50	40	40	30	20
Oats	70	50	30	0	0	0	50	40	10	0	0	0
Onions	100	70	50	30	10	0	90	60	40	30	0	0
Peanuts	50	40	20	0	0	0	50	40	40	30	20	0
Peas	40	30	10	0	0	0	40	30	20	0	0	0
Red Clover	100	90	80	50	30	0	100	70	50	20	0	0
Safflower	70	40	30	10	0	0	70	60	50	40	40	30
Snapbeans	70	50	40	30	10	0	60	40	40	40	40	40
Sorghum	60	40	20	0	0	0	40	20	0	0	0	0
Soybeans	60	50	30	0	0	0	80	60	40	40	40	30
Squash	100	70	40	20	10	0	90	60	50	40	40	30
Sugarbeets	100	100	70	50	40	20	50	40	40	30	30	20
Tomatoes	100	100	100	60	40	10	100	100	100	90	80	60
Turnips	100	100	70	40	10	0	50	40	30	30	30	20
Crop Tox. Av.	79	65	46	22	10	1	67	50	36	27	22	17
<u>Weeds</u>												
Crabgrass	90	70	50	20	10	0	40	30	0	0	0	0
Ryegrass	100	80	60	40	10	0	70	50	40	10	0	0
Other Grasses	50	30	0	0	0	0	40	30	10	0	0	0
Mustard	100	100	80	40	10	0	90	60	40	40	30	20
Pigweed	90	70	50	40	10	0	40	20	0	0	0	0
Other Brdlf.	80	70	60	40	30	0	40	30	20	0	0	0
Weed Tox. Av.	85	70	50	30	12	0	53	37	18	8	5	3
Total Tox. Av.	80	66	47	23	11	1	64	47	32	23	18	14

TABLE 20.-- Secondary Logarithmic Rate Plot Results

Chemical

1-[2-benzthiazolyl]-3-methylimidazolidine-2,4,5-thione

Application	Preemergence						Postemergence					
Rate lb/A (	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>												
Alfalfa	60	40	10	0	0	0	50	40	20	0	0	0
B-ft. trefoil	100	70	50	20	0	0	40	20	0	0	0	0
Buckwheat	30	10	0	0	0	0	90	70	50	30	20	0
Cabbage	90	60	40	30	10	0	100	60	40	10	0	0
Corn, field	20	10	0	0	0	0	30	10	10	10	10	10
Corn, sweet	40	20	0	0	0	0	40	30	20	10	10	10
Cotton	50	40	20	0	0	0	50	40	30	0	0	0
Cucumbers	80	60	40	20	0	0	80	60	50	20	0	0
Flax	30	10	0	0	0	0	40	20	0	0	0	0
Lima beans	30	20	0	0	0	0	40	20	10	0	0	0
Oats	30	20	0	0	0	0	20	0	0	0	0	0
Onions	50	30	10	0	0	0	40	20	0	0	0	0
Peanuts	40	30	10	0	0	0	40	40	30	0	0	0
Peas	40	30	10	0	0	0	30	10	0	0	0	0
Red Clover	100	100	70	50	20	10	30	10	0	0	0	0
Safflower	20	0	0	0	0	0	70	60	40	30	0	0
Snapbeans	40	30	10	0	0	0	40	40	30	30	10	0
Sorghum	30	20	0	0	0	0	20	10	0	0	0	0
Soybeans	20	10	0	0	0	0	40	10	0	0	0	0
Squash	60	40	20	0	0	0	50	40	10	0	0	0
Sugarbeets	20	10	0	0	0	0	50	30	10	0	0	0
Tomatoes	70	50	40	20	0	0	100	100	100	90	70	60
Turnips	60	50	30	10	0	0	70	50	20	0	0	0
Crop Tox. Av.	48	33	16	7	1	0	50	34	20	10	5	3
<u>Weeds</u>												
Crabgrass	30	10	0	0	0	0	40	10	0	0	0	0
Ryegrass	20	10	0	0	0	0	40	30	10	0	0	0
Other Grasses	30	10	0	0	0	0	40	30	10	0	0	0
Mustard	70	60	30	10	0	0	100	40	20	0	0	0
Pigweed	70	50	40	20	0	0	0	0	0	0	0	0
Other Brdlf.	80	70	50	30	0	0	30	20	0	0	0	0
Weed Tox. Av.	50	35	20	10	0	0	42	22	7	0	0	0
Total Tox. Av.	49	33	17	7	1	0	49	32	18	8	4	3



TABLE 21.-- Secondary Logarithmic Rate Plot Results

Chemical		[5-methyl-benzimidazolyl-(2)]-[N-chlorophenyl-N',N'-dimethylfomamidinyl]										
Application		Preemergence					Postemergence					
Rate lb/A (	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>												
Alfalfa	40	20	0	0	0	0	40	30	10	0	0	0
B-ft. trefoil	100	60	50	40	10	0	30	10	0	0	0	0
Buckwheat	20	10	0	0	0	0	30	20	10	0	0	0
Cabbage	50	40	30	10	0	0	40	30	20	0	0	0
Corn, field	20	0	0	0	0	0	0	0	0	0	0	0
Corn, sweet	40	30	10	0	0	0	0	0	0	0	0	0
Cotton	30	30	20	0	0	0	20	10	0	0	0	0
Cucumbers	30	20	0	0	0	0	40	40	20	0	0	0
Flax	0	0	0	0	0	0	10	0	0	0	0	0
Lima beans	30	20	10	0	0	0	20	10	0	0	0	0
Oats	20	10	0	0	0	0	0	0	0	0	0	0
Onions	40	30	10	0	0	0	0	0	0	0	0	0
Peanuts	20	10	0	0	0	0	30	20	0	0	0	0
Peas	40	30	10	0	0	0	10	0	0	0	0	0
Red Clover	100	80	70	50	20	0	20	10	0	0	0	0
Safflower	0	0	0	0	0	0	40	30	30	10	0	0
Snapbeans	30	20	0	0	0	0	40	30	0	0	0	0
Sorghum	30	20	0	0	0	0	0	0	0	0	0	0
Soybeans	30	10	0	0	0	0	30	20	0	0	0	0
Squash	50	40	30	10	0	0	20	10	0	0	0	0
Sugarbeets	20	10	0	0	0	0	50	40	30	0	0	0
Tomatoes	70	40	30	10	0	0	40	20	10	0	0	0
Turnips	40	30	10	0	0	0	20	10	0	0	0	0
Crop Tox. Av.	37	24	12	5	1	0	23	15	6	0	0	0
<u>Weeds</u>												
Crabgrass	30	20	0	0	0	0	20	10	0	0	0	0
Ryegrass	30	20	10	0	0	0	20	0	0	0	0	0
Other Grasses	50	30	10	0	0	0	0	0	0	0	0	0
Mustard	60	50	40	30	0	0	30	10	0	0	0	0
Pigweed	50	40	20	0	0	0	30	20	0	0	0	0
Other Brdlf.	60	40	30	10	0	0	40	10	0	0	0	0
Weed Tox. Av.	47	33	18	7	0	0	23	8	0	0	0	0
Total Tox. Av.	39	26	13	6	1	0	23	13	4	0	0	0

TABLE 22.-- Secondary Logarithmic Rate Plot Results

Chemical		2,3,5-trichloro-4-pyridinol										
Application							Postemergence					
Preemergence												
Rate lb/A (	2	1	1/2	1/4	1/8	1/16	2	1	1/2	1/4	1/8	1/16
<u>Crops</u>												
Alfalfa	100	100	100	100	90	60	100	70	60	40	40	40
B-ft. trefoil	100	100	100	100	70	60	100	100	80	60	50	40
Buckwheat	100	100	90	60	40	30	50	40	40	40	30	30
Cabbage	100	100	100	90	90	60	100	70	60	40	30	30
Corn, field	100	80	60	40	30	10	40	40	30	30	10	0
Corn, sweet	90	60	50	40	20	0	60	50	40	40	40	40
Cotton	100	100	90	60	40	30	90	80	60	50	40	40
Cucumbers	100	100	100	90	80	60	60	50	40	40	30	30
Flax	100	100	90	70	40	20	80	60	40	20	0	0
Lima beans	100	100	90	70	60	50	80	70	60	50	40	40
Oats	100	100	100	100	90	70	100	90	70	50	40	30
Onions	100	100	100	100	100	60	100	100	100	80	70	50
Peanuts	50	40	20	0	0	0	50	40	30	30	10	0
Peas	100	100	100	80	60	40	90	70	60	40	40	40
Red Clover	100	100	100	100	100	90	100	100	80	60	50	40
Safflower	100	100	100	80	50	20	90	80	60	50	40	40
Snapbeans	100	100	90	80	60	50	80	70	60	50	40	40
Sorghum	100	100	100	90	70	60	70	60	50	40	40	30
Soybeans	90	90	80	60	40	40	80	70	50	40	40	40
Squash	100	90	90	90	90	70	100	80	70	50	40	30
Sugarbeets	100	100	90	80	70	50	60	40	40	30	10	0
Tomatoes	100	100	100	100	90	60	100	100	100	90	70	50
Turnips	100	100	100	90	90	60	100	70	50	40	40	40
Crop Tox. Av.	97	94	89	77	64	46	82	70	58	46	37	31
<u>Weeds</u>												
Crabgrass	100	100	100	70	50	40	50	40	10	0	0	0
Ryegrass	100	100	100	100	90	70	100	100	60	40	10	0
Other Grasses	100	100	100	90	80	70	50	40	10	0	0	0
Mustard	100	100	100	100	100	80	100	100	80	50	40	30
Pigweed	100	100	100	100	100	100	100	80	50	30	20	0
Other Brdfl.	100	100	100	100	100	100	100	90	60	40	30	30
Weed Tox. Av.	100	100	100	93	87	77	83	75	45	27	17	10
Total Tox. Av.	98	95	91	80	69	52	82	71	55	42	32	27

TABLE 23.-- Secondary Logarithmic Rate Plot Results

Chemical

1-methyl-3-[3-(N-tert-butylcarbamyloxy)phenyl]urea

Application							Postemergence					
Preemergence												
Rate lb/A (	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>												
Alfalfa	100	100	100	100	100	60	100	100	60	50	30	30
B-ft. trefoil	100	100	100	100	100	60	100	100	100	100	60	30
Buckwheat	100	100	100	100	90	50	100	100	100	90	70	50
Cabbage	100	100	100	100	100	80	100	100	90	70	50	30
Corn, field	100	100	100	80	50	40	100	60	50	30	10	0
Corn, sweet	100	100	100	80	60	40	100	100	100	70	50	40
Cotton	100	90	70	50	20	0	100	100	100	100	60	40
Cucumbers	100	100	100	100	90	50	100	100	100	80	50	40
Flax	100	100	70	30	0	0	70	60	40	30	10	0
Lima beans	100	100	100	100	70	40	100	100	100	60	50	40
Oats	100	100	100	90	70	50	100	80	70	50	40	30
Onions	100	100	100	100	70	50	100	100	100	90	70	50
Peanuts	100	90	70	40	30	0	100	100	80	50	30	10
Peas	100	90	50	30	0	0	60	50	40	40	30	10
Red Clover	100	100	100	100	100	80	100	100	100	100	60	50
Safflower	100	100	70	30	10	0	100	100	80	60	50	40
Snapbeans	100	100	100	100	80	50	100	100	90	50	30	20
Sorghum	100	100	100	90	60	40	100	70	50	40	20	0
Soybeans	100	100	100	90	60	40	100	100	100	90	70	50
Squash	100	100	100	90	70	50	100	100	80	60	40	20
Sugarbeets	100	100	100	100	80	50	100	100	80	50	40	20
Tomatoes	100	100	100	100	100	50	100	100	100	100	80	60
Turnips	100	100	70	60	50	40	100	100	100	80	50	30
Crop Tox. Av.	100	100	91	81	63	40	97	92	83	67	46	30
<u>Weeds</u>												
Crabgrass	90	80	70	50	30	0	100	90	80	60	30	10
Ryegrass	100	100	100	100	70	50	100	100	100	80	60	40
Other Grasses	100	90	80	60	50	30	90	80	70	30	10	0
Mustard	100	100	100	100	100	90	100	100	80	60	40	30
Pigweed	100	100	100	100	80	70	100	100	90	70	40	10
Other Brdlf.	100	100	100	90	50	30	100	100	100	70	50	20
Weed Tox. Av.	98	95	92	83	63	45	98	95	87	62	38	18
Total Tox. Av.	100	99	91	81	63	41	97	93	84	66	44	28



TABLE 24.-- Secondary Logarithmic Rate Plot Results

Chemical		1,1-dimethyl-3-[3-( <u>N-tert</u> -butylcarbamyloxy)phenyl]urea											
Application		Preemergence						Postemergence					
Rate lb/A (		8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>													
Alfalfa		100	100	100	100	100	70	100	100	100	60	40	20
B-ft. trefoil		100	100	100	100	100	80	100	100	100	100	70	40
Buckwheat		100	100	100	100	100	100	100	100	100	80	60	40
Cabbage		100	100	100	100	100	100	100	100	100	100	80	50
Corn, field		100	100	100	100	70	50	100	100	90	40	20	10
Corn, sweet		100	100	100	100	70	50	100	100	100	80	50	40
Cotton		100	100	100	100	80	50	100	100	100	70	50	30
Cucumbers		100	100	100	100	100	100	100	100	100	100	60	30
Flax		100	100	100	90	70	40	100	100	80	60	30	10
Lima beans		100	100	100	100	100	90	100	100	100	100	60	40
Oats		100	100	100	100	80	60	100	100	90	70	40	30
Onions		100	100	100	100	100	70	100	100	100	100	70	60
Peanuts		100	100	100	80	60	40	100	100	100	70	40	10
Peas		100	100	100	100	80	50	100	100	90	70	60	40
Red Clover		100	100	100	100	100	100	100	100	100	100	90	40
Safflower		100	100	100	100	80	40	100	100	100	70	50	40
Snapbeans		100	100	100	100	100	90	100	100	100	100	60	40
Sorghum		100	100	100	100	70	50	100	100	90	50	20	10
Soybeans		100	100	100	100	100	70	100	100	100	100	60	30
Squash		100	100	100	100	100	90	100	100	100	70	50	10
Sugarbeets		100	100	100	100	100	90	100	100	100	80	70	40
Tomatoes		100	100	100	100	100	80	100	100	100	100	100	70
Turnips		100	100	100	100	100	90	100	100	100	100	70	50
Crop Tox. Av.		100	100	100	99	90	72	100	100	97	81	57	34
<u>Weeds</u>													
Crabgrass		100	100	90	80	70	40	100	100	80	60	20	0
Ryegrass		100	100	100	100	100	100	100	100	100	100	90	70
Other Grasses		100	100	100	100	80	60	100	90	80	60	30	10
Mustard		100	100	100	100	100	100	100	100	100	70	50	40
Pigweed		100	100	100	100	100	80	100	100	100	80	50	20
Other Brdlf.		100	100	100	100	100	80	100	100	100	90	50	20
Weed Tox. Av.		100	100	98	97	92	77	100	98	93	77	48	27
Total Tox. Av.		100	100	100	98	90	73	100	100	97	80	55	32



TABLE 25.-- Secondary Logarithmic Rate Plot Results

Chemical

N-4-(p-methoxyphenoxy) phenyl-N<sup>1</sup>,N<sup>1</sup>-dimethylurea

Application	Preemergence						Postemergence					
Rate lb/A (	4	2	1	1/2	1/4	1/8	4	2	1	1/2	1/4	1/8
<u>Crops</u>												
Alfalfa	20	10	0	0	0	0	40	30	20	0	0	0
B-ft. trefoil	60	40	20	0	0	0	50	30	20	0	0	0
Buckwheat	20	10	0	0	0	0	100	90	50	40	30	10
Cabbage	60	40	20	0	0	0	90	70	50	30	10	0
Corn, field	30	10	0	0	0	0	20	10	0	0	0	0
Corn, sweet	40	30	10	0	0	0	30	20	10	0	0	0
Cotton	40	30	20	10	0	0	40	30	10	0	0	0
Cucumbers	40	30	20	0	0	0	100	80	60	40	20	10
Flax	20	10	0	0	0	0	40	20	0	0	0	0
Lima beans	40	20	10	0	0	0	40	30	10	0	0	0
Oats	20	10	0	0	0	0	30	10	0	0	0	0
Onions	40	20	10	0	0	0	30	10	0	0	0	0
Peanuts	20	10	0	0	0	0	30	30	10	0	0	0
Peas	30	10	0	0	0	0	40	30	10	0	0	0
Red Clover	70	40	20	0	0	0	60	40	30	0	0	0
Safflower	20	10	0	0	0	0	40	40	30	10	0	0
Snapbeans	40	30	0	0	0	0	80	60	50	40	40	30
Sorghum	20	10	0	0	0	0	30	10	0	0	0	0
Soybeans	20	0	0	0	0	0	40	30	10	0	0	0
Squash	20	0	0	0	0	0	100	100	70	40	30	10
Sugarbeets	60	40	30	10	0	0	100	100	60	40	30	30
Tomatoes	60	40	20	0	0	0	100	100	100	100	80	70
Turnips	70	50	40	20	0	0	80	70	50	40	30	0
Crop Tox. Av.	37	22	10	2	0	0	57	45	28	17	12	7
<u>Weeds</u>												
Crabgrass	50	40	30	0	0	0	30	10	0	0	0	0
Ryegrass	40	20	10	0	0	0	40	30	10	0	0	0
Other Grasses	70	50	40	10	0	0	30	10	0	0	0	0
Mustard	100	80	60	40	20	0	80	70	50	40	10	0
Pigweed	90	80	60	50	40	40	60	40	30	10	0	0
Other Brdlf.	80	60	40	20	0	0	50	30	10	0	0	0
Weed Tox. Av.	72	55	40	20	10	7	48	32	17	8	2	0
Total Tox. Av.	45	29	16	6	2	1	55	42	26	15	10	6

TABLE 26.-- Secondary Logarithmic Rate Plot Results

Chemical		2-[(4-chloro-o-tolyl)oxy]-N-methoxyacetamide											
Application		Preemergence						Postemergence					
Rate lb/A (	4	2	1	1/2	1/4	1/8	4	2	1	1/2	1/4	1/8	
<u>Crops</u>													
Alfalfa	100	100	100	80	60	30	100	100	80	60	30	0	
B-ft. trefoil	100	80	70	60	40	30	40	30	10	0	0	0	
Buckwheat	30	10	0	0	0	0	70	60	50	50	40	40	
Cabbage	100	80	60	40	20	0	100	90	80	60	40	20	
Corn, field	40	10	0	0	0	0	40	20	0	0	0	0	
Corn, sweet	30	20	0	0	0	0	50	40	30	0	0	0	
Cotton	70	60	50	40	30	20	70	60	50	40	40	20	
Cucumbers	100	80	60	40	20	0	80	70	50	40	30	0	
Flax	30	10	0	0	0	0	40	20	0	0	0	0	
Lima beans	50	40	30	10	0	0	70	60	50	40	20	0	
Oats	30	10	0	0	0	0	20	10	0	0	0	0	
Onions	100	80	70	60	30	10	70	60	40	40	20	0	
Peanuts	30	20	0	0	0	0	50	40	10	0	0	0	
Peas	30	10	0	0	0	0	30	20	0	0	0	0	
Red Clover	100	80	70	70	40	30	40	30	10	0	0	0	
Safflower	60	40	30	0	0	0	100	80	70	60	50	40	
Snapbeans	40	40	30	10	0	0	70	60	40	40	30	10	
Sorghum	40	30	10	0	0	0	40	30	10	0	0	0	
Soybeans	40	20	10	0	0	0	80	70	60	50	40	20	
Squash	70	50	40	30	30	10	80	60	50	40	40	20	
Sugarbeets	100	80	70	60	40	10	100	80	60	40	30	10	
Tomatoes	100	90	60	30	10	0	100	100	80	70	60	40	
Turnips	100	70	40	30	10	0	100	80	70	50	40	20	
Crop Tox. Av.	65	48	35	24	14	6	67	55	39	30	22	10	
<u>Weeds</u>													
Crabgrass	40	30	10	0	0	0	40	30	10	0	0	0	
Ryegrass	80	60	40	30	10	0	40	30	10	0	0	0	
Other Grasses	30	20	0	0	0	0	40	30	20	0	0	0	
Mustard	100	80	60	40	10	0	100	100	100	80	60	40	
Pigweed	70	50	30	20	0	0	100	80	60	50	40	20	
Other Brdlf.	60	50	30	10	0	0	60	50	40	20	0	0	
Weed Tox. Av.	63	48	28	17	3	0	63	53	40	25	17	10	
Total Tox. Av.	64	48	33	23	12	5	66	55	39	29	21	10	

TABLE 27.-- Secondary Logarithmic Rate Plot Results

Chemical		2,4-dichlorophenoxyacetic acid										
Application		Preemergence					Postemergence					
Rate lb/A (	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>												
Alfalfa	100	100	100	80	50	20	100	100	100	80	70	60
B-ft. trefoil	100	100	100	80	70	60	60	40	20	0	0	0
Buckwheat	30	20	0	0	0	0	90	70	70	60	50	50
Cabbage	100	100	100	90	80	60	100	100	80	70	60	50
Corn, field	50	30	10	0	0	0	40	40	20	0	0	0
Corn, sweet	60	50	30	0	0	0	50	40	40	10	0	0
Cotton	70	60	50	40	40	40	100	80	70	60	50	40
Cucumbers	100	100	100	70	40	10	70	50	40	30	10	0
Flax	60	40	20	0	0	0	100	70	40	20	10	0
Lima beans	80	60	50	30	10	0	100	80	70	60	50	40
Oats	50	30	10	0	0	0	20	10	0	0	0	0
Onions	100	100	100	100	100	100	100	100	80	60	50	40
Peanuts	40	20	0	0	0	0	40	20	0	0	0	0
Peas	90	60	40	30	10	0	100	70	50	40	30	0
Red Clover	100	100	100	80	70	60	80	80	70	70	60	40
Safflower	90	80	70	50	40	20	100	100	100	90	70	70
Snapbeans	80	70	60	50	40	40	100	100	70	60	50	40
Sorghum	70	40	30	0	0	0	40	30	0	0	0	0
Soybeans	60	40	40	20	0	0	100	100	70	60	50	40
Squash	100	90	80	60	40	10	70	50	40	30	20	20
Sugarbeets	100	100	90	70	40	40	100	100	70	60	50	30
Tomatoes	100	100	90	50	30	20	100	100	100	100	90	80
Turnips	100	100	100	80	70	40	90	80	80	70	60	50
Crop Tox. Av.	80	69	60	43	32	23	80	70	56	45	36	28
<u>Weeds</u>												
Crabgrass	40	30	10	0	0	0	30	20	0	0	0	0
Ryegrass	40	30	20	10	0	0	30	20	10	0	0	0
Other Grasses	60	50	30	0	0	0	30	20	10	0	0	0
Mustard	100	100	90	70	70	60	100	100	90	80	70	60
Pigweed	100	80	50	30	10	0	100	100	100	80	70	60
Other Brdlf.	90	80	70	60	30	20	100	90	80	70	60	50
Weed Tox. Av.	72	62	45	28	18	13	65	58	48	38	33	28
Total Tox. Av.	78	68	57	40	29	21	77	68	54	43	36	28

TABLE 28.-- Secondary Logarithmic Rate Plot Results

Chemical		isopropyl N-(3-chlorophenyl)carbamate											
Application		Preemergence						Postemergence					
Rate lb/A (		8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>													
Alfalfa	40	30	0	0	0	0	40	30	10	0	0	0	0
B-ft. trefoil	90	70	50	20	0	0	50	40	20	0	0	0	0
Buckwheat	100	100	100	100	100	100	50	40	40	40	40	40	30
Cabbage	100	80	50	30	0	0	40	30	30	10	0	0	0
Corn, field	30	0	0	0	0	0	30	0	0	0	0	0	0
Corn, sweet	30	20	0	0	0	0	40	30	10	0	0	0	0
Cotton	30	10	0	0	0	0	40	30	10	0	0	0	0
Cucumbers	100	100	100	90	80	70	60	50	40	20	0	0	0
Flax	100	100	80	40	10	0	50	40	30	0	0	0	0
Lima beans	30	20	10	0	0	0	50	40	20	10	0	0	0
Oats	100	70	60	30	20	0	60	60	60	40	10	0	0
Onions	80	60	40	20	0	0	60	50	40	20	10	0	0
Peanuts	30	10	0	0	0	0	40	40	10	0	0	0	0
Peas	40	30	10	0	0	0	30	20	0	0	0	0	0
Red Clover	100	70	40	20	0	0	50	40	20	0	0	0	0
Safflower	10	0	0	0	0	0	40	40	30	10	0	0	0
Snapbeans	20	10	0	0	0	0	40	30	30	10	0	0	0
Sorghum	100	90	80	40	10	0	40	30	10	0	0	0	0
Soybeans	20	10	0	0	0	0	40	40	30	10	0	0	0
Squash	50	40	30	10	0	0	40	40	30	0	0	0	0
Sugarbeets	100	80	60	40	20	0	40	30	20	0	0	0	0
Tomatoes	100	90	80	50	30	0	40	40	10	0	0	0	0
Turnips	90	70	50	20	0	0	50	40	30	10	0	0	0
Crop Tox. Av.	65	51	37	22	12	7	44	36	23	8	3	1	
<u>Weeds</u>													
Crabgrass	80	60	40	10	0	0	40	20	10	0	0	0	0
Ryegrass	100	100	100	80	50	20	40	30	20	0	0	0	0
Other Grasses	70	70	60	50	20	0	30	20	10	0	0	0	0
Mustard	100	100	90	60	30	10	50	40	30	0	0	0	0
Pigweed	70	70	60	40	10	0	70	40	20	0	0	0	0
Other Brdlf.	80	70	60	40	20	10	40	30	20	0	0	0	0
Weed Tox. Av.	83	78	68	47	22	7	45	30	18	0	0	0	
Total Tox. Av.	69	57	43	27	14	7	44	35	22	6	2	1	



TABLE 29.-- Secondary Logarithmic Rate Plot Results

Chemical		4,6-dinitro-o-sec-butylphenol											
Application		Preemergence						Postemergence					
Rate lb/A (		8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Crops</u>													
Alfalfa	100	100	60	30	10	0		100	70	60	40	30	20
B-ft. trefoil	100	80	70	40	20	0		100	60	40	30	0	0
Buckwheat	100	100	90	70	60	30		50	40	30	10	0	0
Cabbage	100	100	100	100	100	70		100	100	100	90	70	60
Corn, field	0	0	0	0	0	0		50	40	30	0	0	0
Corn, sweet	20	10	0	0	0	0		50	40	10	0	0	0
Cotton	20	10	0	0	0	0		70	60	40	10	0	0
Cucumbers	80	60	30	0	0	0		100	70	40	30	10	0
Flax	100	80	50	30	0	0		100	100	70	50	30	0
Lima beans	20	10	0	0	0	0		30	10	0	0	0	0
Oats	70	40	30	0	0	0		30	10	0	0	0	0
Onions	100	80	80	70	50	40		100	100	100	90	70	40
Peanuts	30	10	0	0	0	0		0	0	0	0	0	0
Peas	20	10	0	0	0	0		20	10	0	0	0	0
Red Clover	80	60	30	10	0	0		100	70	50	40	10	0
Safflower	100	100	90	80	50	40		100	100	100	100	100	80
Snapbeans	30	10	0	0	0	0		40	30	10	0	0	0
Sorghum	30	20	0	0	0	0		40	30	10	0	0	0
Soybeans	20	10	0	0	0	0		70	60	40	20	0	0
Squash	40	20	0	0	0	0		50	40	20	0	0	0
Sugarbeets	100	100	100	100	90	60		100	100	100	70	50	40
Tomatoes	100	100	90	70	60	40		100	100	100	90	70	60
Turnips	100	100	100	100	80	60		100	100	70	40	20	0
Crop Tox. Av.	63	53	40	30	23	15		70	58	44	31	20	13
<u>Weeds</u>													
Crabgrass	80	50	20	0	0	0		20	10	0	0	0	0
Ryegrass	50	40	20	0	0	0		80	70	60	50	30	10
Other Grasses	80	70	40	10	0	0		30	10	0	0	0	0
Mustard	100	100	100	100	70	60		100	100	100	80	60	40
Pigweed	100	90	80	70	50	40		100	80	70	50	30	0
Other Brdlf.	100	100	80	60	30	10		40	30	20	0	0	0
Weed Tox. Av.	85	75	57	40	25	18		62	50	42	30	20	8
Total Tox. Av.	68	57	43	32	23	15		68	57	44	31	20	12



TABLE 30.--Summary table of secondary preemergence logarithmic rate plots showing chemicals tolerated by crops and their control of broadleaf weeds and weed-grasses. 1/

Vegetable Crops			Sugar Crops	Oilseed and Fiber Crops	Cereals and Small Seeded Forage Crops	Crops	Weeds	Chemicals																
Turnips	Tomatoes	Squash	Snapbeans	Peas	Onions	Lima beans	Cucumbers	Corn, sweet	Cabbage	Sugarbeets	Soybeans	Safflower	Peanuts	Flax	Cotton	Sorghum	Oats	Corn, field	Buckwheat	Red clover	B-ft. trefoil	Alfalfa	Brdlf.	2-sec-butylamino-4-isopropyl-amino-6-methylmercapto-s-triazine (11)
																							Grasses	2-tert-butylamino-4-isopropyl-amino-6-methylmercapto-s-triazine (12)
Turnips	Tomatoes	Squash	Snapbeans	Peas	Onions	Lima beans	Cucumbers	Corn, sweet	Cabbage	Sugarbeets	Soybeans	Safflower	Peanuts	Flax	Cotton	Sorghum	Oats	Corn, field	Buckwheat	Red clover	B-ft. trefoil	Alfalfa	Brdlf.	2-sec-butylamino-4-ethylamino-6-methylmercapto-s-triazine (13)
																							Grasses	2-sec-butylamino-4-ethylamino-6-methylmercapto-s-triazine (13)
Turnips	Tomatoes	Squash	Snapbeans	Peas	Onions	Lima beans	Cucumbers	Corn, sweet	Cabbage	Sugarbeets	Soybeans	Safflower	Peanuts	Flax	Cotton	Sorghum	Oats	Corn, field	Buckwheat	Red clover	B-ft. trefoil	Alfalfa	Brdlf.	2-(N-acetyllethylamino)-4-isopropylamino-6-methoxy-s-triazine (14)
																							Grasses	2-(N-acetyllethylamino)-4-isopropylamino-6-methoxy-s-triazine (14)
Turnips	Tomatoes	Squash	Snapbeans	Peas	Onions	Lima beans	Cucumbers	Corn, sweet	Cabbage	Sugarbeets	Soybeans	Safflower	Peanuts	Flax	Cotton	Sorghum	Oats	Corn, field	Buckwheat	Red clover	B-ft. trefoil	Alfalfa	Brdlf.	2-ethylamino-4-ethylmercapto-6-isopropylamino-s-triazine (15)
																							Grasses	2-ethylamino-4-ethylmercapto-6-isopropylamino-s-triazine (15)
Turnips	Tomatoes	Squash	Snapbeans	Peas	Onions	Lima beans	Cucumbers	Corn, sweet	Cabbage	Sugarbeets	Soybeans	Safflower	Peanuts	Flax	Cotton	Sorghum	Oats	Corn, field	Buckwheat	Red clover	B-ft. trefoil	Alfalfa	Brdlf.	1-(3-chloro-4-methylphenyl)-3-methyl-2-pyrrolidinone (16)
																							Grasses	1-(3-chloro-4-methylphenyl)-3-methyl-2-pyrrolidinone (16)
Turnips	Tomatoes	Squash	Snapbeans	Peas	Onions	Lima beans	Cucumbers	Corn, sweet	Cabbage	Sugarbeets	Soybeans	Safflower	Peanuts	Flax	Cotton	Sorghum	Oats	Corn, field	Buckwheat	Red clover	B-ft. trefoil	Alfalfa	Brdlf.	1-(3,4-dichlorophenyl)-3-methyl-2-pyrrolidinone (17)
																							Grasses	1-(3,4-dichlorophenyl)-3-methyl-2-pyrrolidinone (17)
Turnips	Tomatoes	Squash	Snapbeans	Peas	Onions	Lima beans	Cucumbers	Corn, sweet	Cabbage	Sugarbeets	Soybeans	Safflower	Peanuts	Flax	Cotton	Sorghum	Oats	Corn, field	Buckwheat	Red clover	B-ft. trefoil	Alfalfa	Brdlf.	1,1-dimethyl-4,6-diisopropyl-5-idanyl ethyl ketone (18)
																							Grasses	1,1-dimethyl-4,6-diisopropyl-5-idanyl ethyl ketone (18)
Turnips	Tomatoes	Squash	Snapbeans	Peas	Onions	Lima beans	Cucumbers	Corn, sweet	Cabbage	Sugarbeets	Soybeans	Safflower	Peanuts	Flax	Cotton	Sorghum	Oats	Corn, field	Buckwheat	Red clover	B-ft. trefoil	Alfalfa	Brdlf.	1-[3-chlorophenyl]-3,5-dimethyl-hexahydro-triazinone-2 (19)
																							Grasses	1-[3-chlorophenyl]-3,5-dimethyl-hexahydro-triazinone-2 (19)
Turnips	Tomatoes	Squash	Snapbeans	Peas	Onions	Lima beans	Cucumbers	Corn, sweet	Cabbage	Sugarbeets	Soybeans	Safflower	Peanuts	Flax	Cotton	Sorghum	Oats	Corn, field	Buckwheat	Red clover	B-ft. trefoil	Alfalfa	Brdlf.	1-[2-benzthiazolyl]-3-methyl-imidazolidine-2,4,5-thione (20)
																							Grasses	1-[2-benzthiazolyl]-3-methyl-imidazolidine-2,4,5-thione (20)

1/ Checks are placed opposite crops that tolerated respective chemicals (Phytotoxicity index, 30 or less) in which broadleaf weeds or weed-grasses were controlled (Phytotoxicity Index, 70 or more).

Table 30.--Continued

Vegetable Crops			Sugar Crops	Oilseed and Fiber Crops	Cereals and Forage Crops	Small Seeded Legume Crops	Crops	Weeds	Chemicals
Weeds not controlled at level tolerated by crops.								Brdlf.	[5-methyl-benzimidazolyl-(2)]-[N-chlorophenyl-N',N'-dimethyl-fomamidinyl] (21)
								Grasses	
X								Brdlf.	2,3,5-trichloro-4-pyridinol (22)
								Grasses	
X								Brdlf.	1-methyl-3-[3-(N-tert-butyl-carbamyl-oxy)phenyl]urea (23)
								Grasses	
Very active, not tolerated by test species at rates used.								Brdlf.	1,1-dimethyl-3-[3-(N-tert-butylcarbamyl-oxy)phenyl]urea (24)
								Grasses	
X								Brdlf.	N-4-(p-methoxyphenoxy)phenyl-N',N'-dimethylurea (25)
								Grasses	
X								Brdlf.	2-[(4-chloro-o-tolyl)oxy]-N-methoxyacetamide (26)
								Grasses	
X								Brdlf.	2,4-dichlorophenoxyacetic acid (27)
								Grasses	
X								Brdlf.	isopropyl N-(3-chlorophenyl) carbamate (28)
								Grasses	
X								Brdlf.	4,6-dinitro-o-sec-butylphenol (29)
								Grasses	

1/ Checks are placed opposite crops that tolerated respective chemicals (Phytotoxicity index, 30 or less) in which broadleaf weeds or weed-grasses were controlled (Phytotoxicity index, 70 or more).

TABLE 31.--Summary table of secondary postemergence logarithmic rate plots showing chemicals tolerated by crops and their control of broadleaf weeds and weed-grasses. 1/

				<u>Weeds</u>		<u>Chemicals</u>
<u>Vegetable Crops</u>	<u>Sugar Crops</u>	<u>Oilseed and Fiber Crops</u>	<u>Cereals and Forage Crops</u>	<u>Crops</u>		
				Small Seeded Legume Crops		
				Alfalfa	X	2-sec-butylamino-4-isopropyl- amino-6-methylmercapto-s-tria- zine (11)
				B-ft. trefoil		
				Red clover		2-tert-butylamino-4-isopropyl- amino-6-methylmercapto-s-tria- zine (12)
					X	
				Buckwheat		2-sec-butylamino-4-ethylamino- 6-methylmercapto-s-triazine (13)
				Corn, field	X	
				Oats	X	2-(N-acetylethylamino)-4-iso- propylamino-6-methoxy-s-tria- zine (14)
				Sorghum	X	
						2-ethylamino-4-ethylmercapto-6- isopropylamino-s-triazine (15)
					X	
					X	1-(3-chloro-4-methylphenyl)-3- methyl-2-pyrrolidinone (16)
					X	
					X	1-(3,4-dichlorophenyl)-3- methyl-2-pyrrolidinone (17)
					X	
					X	1,1-dimethyl-4,6-diisopropyl-5- idanyl ethyl ketone (18)
					X	
						1-[3-chlorophenyl]-3,5-dimethyl -hexahydro-triazinone-2 (19)
						1-[2-benzthiazolyl]-3-methyl- imidazolidine-2,4,5-thione (20)

1/ Checks are placed opposite crops that tolerated respective chemicals (Phytotoxicity index, 30 or less) in which broadleaf weeds or weed-grasses were controlled (Phytotoxicity index, 70 or more).

Table 31.--Continued

				<u>Weeds</u>		<u>Chemicals</u>	
Vegetable Crops	Sugar Crops	Oilseed and Fiber Crops	Cereals and Forage Crops	Small Seeded Legume Crops	<u>Crops</u>	Brdlf. Grasses	[5-methyl-benzimidazolyl-(2)]- [N-chlorophenyl-N',N'-dimethyl- fomamidinyl] (21)
Relatively inactive		X	X		Alfalfa B. ft. trefoil Red clover	Brdlf. Grasses	2,3,5-trichloro-4-pyridinol (22)
		X	X	X	Buckwheat Corn, field Oats Sorghum	Brdlf. Grasses	1-methyl-3-[3-(N-tert-butyl= carbamyloxy)phenyl]urea (23)
		X	X	X	X	Brdlf. Grasses	1,1-dimethyl-3-[3-N-tert- butylcarbamyloxy)phenyl]urea (24)
		X	X	X	X	Brdlf. Grasses	N-4-(p-methoxyphenoxy) phenyl- N',N'-dimethylurea (25)
		X	X	X	X	Brdlf. Grasses	2-[4-chloro-o-tolyl]oxy]-N- methoxyacetamide (26)
		X	X	X	X	Brdlf. Grasses	2,4-dichlorophenoxyacetic acid (27)
		X	X	X	X	Brdlf. Grasses	isopropyl N-(3-chlorophenyl) carbamate (28)
		X	X	X	X	Brdlf. Grasses	4,6-dinitro-o-sec-butylphenol (29)

1/ Checks are placed opposite crops that tolerated respective chemicals (Phytotoxicity index, 30 or less) in which broadleaf weeds or weed-grasses were controlled (Phytotoxicity index, 70 or more).



TABLE 32.--Soil Incorporation Results

1-methyl-3-[3-(N- <u>tert</u> -butylcarbamyloxy)phenyl]urea																		
Chemical																		
Application	Preemergence						Soil Incorporation (Reel)						Soil Incorporation (Rotovator)					
Rate lb/A	2	1	1/2	1/4	1/8	1/16	2	1	1/2	1/4	1/8	1/16	2	1	1/2	1/4	1/8	1/16
<u>Species</u>																		
Corn	70	50	40	40	40	30	70	50	30	20	20	0	60	40	40	20	20	0
Soybeans	100	100	60	30	20	20	70	50	40	30	10	0	70	50	30	10	0	0
Rye	40	30	20	10	0	0	60	40	30	10	0	0	60	40	30	0	0	0
Rape	100	100	80	70	50	40	100	100	70	60	50	30	100	100	70	70	50	30
Crop Tox. Av.	78	70	50	38	28	23	75	60	43	30	20	8	73	58	43	25	18	13

1,1-dimethyl-3-[3-(N- <u>tert</u> -butylcarbamyloxy)phenyl]urea																		
Chemical	Preemergence								Soil Incorporation (Reel)						Soil Incorporation (Rotovator)			
Application																		
Rate lb/A	2	1	1 1/2	1/4	1/8	1/16	2	1	1 1/2	1/4	1/8	1/16	2	1	1 1/2	1/4	1/8	1/16
Species																		
Corn	100	70	60	40	20	10	100	70	60	60	40	20	70	50	40	20	0	0
Soybeans	100	100	80	50	30	10	100	80	50	40	20	0	80	70	40	20	0	0
Rye	70	40	30	10	0	0	80	50	30	10	0	0	50	40	30	10	0	0
Rape	100	100	100	90	70	50	100	100	100	100	80	60	100	100	100	80	60	40
Crop Tox. Av.	93	78	68	48	30	18	95	75	60	53	35	20	75	65	53	33	15	10



TABLE 33.--Soil Incorporation Results

## 2,3,5-trichloro-4-pyridinol

Application	Preemergence						Soil Incorporation (Reel)						Soil Incorporation (Rotovator)					
	1	1/2	1/4	1/8	1/16	1/32	1	1/2	1/4	1/8	1/16	1/32	1	1/2	1/4	1/8	1/16	1/32
Rate lb/A $\downarrow$	1	1/2	1/4	1/8	1/16	1/32	1	1/2	1/4	1/8	1/16	1/32	1	1/2	1/4	1/8	1/16	1/32
<u>Species</u>																		
Corn	100	100	50	30	10	0	100	80	60	40	20	0	100	90	50	30	10	0
Soybeans	90	80	70	60	50	40	90	90	70	60	50	40	90	90	70	60	50	40
Rye	80	50	30	10	0	0	90	80	60	50	40	30	90	80	70	60	50	30
Rape	100	100	100	60	30	0	100	100	100	100	100	90	100	100	100	100	90	80
Crop Tox. Av.	93	83	63	40	23	10	95	88	73	63	53	40	95	90	73	63	50	38

## 1,1-dimethyl-4,6-diisopropyl-5-idanyl ethyl ketone

Application	Preemergence						Soil Incorporation (Reel)						Soil Incorporation (Rotovator)					
	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
Rate lb/A $\downarrow$	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
<u>Species</u>																		
Corn	70	40	20	0	0	0	100	50	30	10	0	0	50	20	10	0	0	0
Soybeans	40	30	10	0	0	0	30	20	0	0	0	0	40	40	10	0	0	0
Rye	70	40	30	10	0	0	60	50	30	10	0	0	70	60	40	30	10	0
Rape	40	30	0	0	0	0	70	50	40	10	0	0	60	40	30	20	10	0
Crop Tox. Av.	55	35	15	3	0	0	65	43	25	8	0	0	55	40	23	13	5	0

TABLE 34.--Soil Incorporation Results

4-(methylsulfonyl)-2,6-dinitro-N,N-dipropylaniline													
Chemical	Preemergence						Soil Incorporation (Reel)						Soil Incorporation (Rotovator)
Application													
Rate lb/A	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4	
Species													
Corn	90	70	60	60	40	30	80	70	50	40	20	10	0
Soybeans	50	50	40	20	0	0	40	40	20	10	0	0	0
Rye	70	60	40	30	10	0	60	40	30	10	0	0	0
Rape	60	30	20	0	0	0	60	60	50	40	30	10	0
Crop Tox. Av.	68	53	40	28	13	8	60	53	38	25	13	5	0

Chemical 3,4-dichlorobenzyl-N-methylcarbamate

Chemical	Preemergence						Soil Incorporation (Reel)						Soil Incorporation (Rotovator)
Application													
Rate lb/A	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4	
Species													
Corn	40	30	10	0	0	0	60	40	10	0	0	0	0
Soybeans	20	10	0	0	0	0	40	30	10	0	0	0	0
Rye	60	30	10	0	0	0	50	40	10	0	0	0	0
Rape	80	40	20	10	0	0	90	70	50	30	10	0	0
Crop Tox. Av.	50	28	10	3	0	0	60	45	20	8	3	0	0

TABLE 35.--Soil Incorporation Results

1-(3-chloro-4-methylphenyl)-3-methyl-2-pyrrolidinone													
Chemical	Preemergence				Soil Incorporation (Reel)				Soil Incorporation (Rotovator)				
Application													
Rate lb/A	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4	
Species													
Corn	40	20	10	0	0	0	50	20	10	0	0	0	0
Soybeans	40	10	0	0	0	0	30	10	0	0	0	0	0
Rye	50	20	0	0	0	0	40	20	0	0	0	0	0
Rape	90	50	30	20	10	0	90	60	40	30	20	0	0
Crop Tox. Av.	55	25	10	5	3	0	53	28	13	8	5	0	0

1-(3,4-dichlorophenyl)-3-methyl-2-pyrrolidinone													
Chemical	Preemergence				Soil Incorporation (Reel)				Soil Incorporation (Rotovator)				
Application													
Rate lb/A	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4	
Species													
Corn	40	20	0	0	0	0	40	30	10	0	0	0	0
Soybeans	30	10	0	0	0	0	20	10	0	0	0	0	0
Rye	20	10	0	0	0	0	50	40	30	0	0	0	0
Rape	80	70	50	30	0	0	90	70	60	50	40	10	0
Crop Tox. Av.	43	28	13	8	0	0	50	38	25	13	10	3	0

TABLE 36.--Soil Incorporation Results

N-4-(p-methoxyphenoxy)phenyl-N',N'-dimethylurea												
Chemical	Preemergence				Soil Incorporation (Reel)				Soil Incorporation (Rotovator)			
Application												
Rate lb/A	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
Species												
Corn	40	10	0	0	0	0	40	30	10	0	0	0
Soybeans	20	10	0	0	0	0	20	10	0	0	0	0
Rye	30	20	10	0	0	0	40	40	20	0	0	0
Rape	60	50	30	10	0	0	80	70	40	20	0	0
Crop Tox. Av.	38	23	10	3	0	0	45	38	18	5	0	0

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4,6-dinitro-o-sec-butylphenol												
Chemical	Preemergence				Soil Incorporation (Reel)				Soil Incorporation (Rotovator)			
Application												
Rate lb/A	8	4	2	1	1/2	1/4	8	4	2	1	1/2	1/4
Species												
Corn	30	20	10	0	0	0	40	30	10	0	0	0
Soybeans	40	20	0	0	0	0	40	40	10	0	0	0
Rye	50	20	10	0	0	0	40	10	0	0	0	0
Rape	100	70	60	20	0	0	100	100	70	50	40	30
Crop Tox. Av.	55	33	20	5	0	0	55	45	23	13	10	8